SCULPTING LANDSCAPE

boulder and void on Buitenkant Street, Cape Town

katherine hall
2017

SCULPTING LANDSCAPE

Katherine Hall

Associate Supervisors
Kevin Fellingham & Nic Coetzer
Design Research Report_APG5057W_November 2017

For my late grandfather who made this degree possible and taught me to build wiers while fishing in rivers.

Many thanks to my parents for their encouragement and support, to my supervisors; Nic Coetzer, for the advice, inspiration and motivation and to Kevin Fellingham for teaching me the beauty of architecture in my second year of study and following through until the very end of this dissertation. Thank you also to Carlo van Aardt for keeping me going and always making me smile when I needed it most. Thanks to all my helpers who so kindly sat with me near the end and helped with the model; Alex Bohmer, Frances van Hasselt, Georgina Campbell and especially to my mum.

Dissertation title: Sculpting Landscapes

Student's name: Katherine Grace Hall

Supervisors: Nic Coetzer and Kevin Fellingham

This dissertation is presented as the part fulfilment of the degree of Master of Architecture (Professional) in the School of Architecture, Planning and Geomatics, University of Cape Town.

01 November 2017

"I hereby:

a. Grant the University free license to reproduce the above dissertation in whole or in part, for the purpose of research.

b. Declare that:

(i) The above dissertation is my own unaided work, both in conception and execution, and that apart from the normal guidance of my supervisors, I have received no assistance apart from that stated below: Nic Coetzer and Kevin Fellingham.

(ii) Except as stated below, neither the substance or any part of the dissertation has been submitted for a degree in the University or any other university.

(iii) I am now presenting the dissertation for examination for the degree of Master of Architecture (Professional)."

A landscape is a space deliberately created to speed up or slow down the process of nature. As Eliade expresses it, it represents man taking upon himself the role of time.

J.B. Jackson, Recovering Landscape, 1999

Abstract

This dissertation proposes that architecture is the conscious sculpting of an existing landscape, providing a lens through which a dweller becomes aware of their surrounds. The outcome of this investigation is a design project on Buitenkant Street, Cape Town. It is a mixed use building: a place to make pots from clay, a place to distil fynbos to fragrant oils, a place to live and a place to submerge your body in water and swim.

The dissertation is made up of four parts. The first investigates *architecture as sculpting landscape* as the solution to the uninhabitable landscapes that become most cities. Part One then looks at the reasons behind our yearning for a sculpted landscape and thereafter, design parameters are defined by researching methods on how we should be sculpting landscapes and how others have achieved this sculpting.

Part Two is an introduction to the Platteklip River, Cape Town's original water source and the site upon which the theoretical ideas defined in Part One becomes a physical manifestation of sculpted landscape. It does this in the form of a narrative, collecting the metaphorical and the physical in a pooling of memories and artefacts, forming the clay from which the sculptor works.

The third part identifies opportunity for intervention within the physical: a literal weir located at what is currently a parking lot, number 63a Buitenkant Street, where the program collected becomes a part of the city.

Part Four presents the manifestation of the theoretical as the physical: a building as a sculpted landscape. The matter becomes the vessel shaped by the void within: a museum of narratives that forms a part of an existing landscape.

0.1 A camp site on the banks of Lake Turkana, Northern Kenya

Preface

The thinking behind this dissertation was initiated by six weeks of travel from Northern Tanzania up to the Chalbi Desert and Lake Turkana, Northern Kenya. The complete immersion in the wild forced one to be in unison with the environmental systems. With only a thin canvas tent, it was learnt that by listening to the elements one could read the land and react accordingly, ensuring shelter from the harshness of the surrounds in the most minimal manner. It was through these readings that one became a part of the landscape, rather than a user or observer. This experience initiated the thinking about architecture as a simple facilitator, a manipulation or sculpting of the existing, in order to make one notice their orientation within a landscape, through time.

Introduction

This thesis understands architecture to be a conscious sculpting of the existing landscape, in order to facilitate a person's sense of orientation, through their experience in time. The environmental systems and narratives that make up that landscape are the matter from which the architect sculpts. The sculpted land, the architecture, becomes the lens that focuses the dweller on their present experience, allowing them to construct an imaginary landscape, one that they most relate to and therefore own.

It is from this premise that the thesis continues as an investigation into the act of sculpting a landscape, creating an experience so embedded in the specificities of a site, that the embodiment spoken of above is made real. The method of inquiry used was one of garnering, termed by my supervisor as "magpieing,"[1] which is the collection of interesting things that somehow fit together under a theme. Magpie collections were considered, compared and either discarded or included as a part of the design process, documented in this dissertation paper as four parts. The result is a design project located at 63a Buitenkant Street, Cape Town. It is a place to make pots from clay, a place to distil fynbos to fragrant oils, a place to live and a place to submerge your body in water and swim.

The first part of this dissertation report forms an in-depth enquiry into 'architecture as sculpting landscape', the theoretical position outlined

above. It defines the problem of our cities as the uninhabitable landscape, as well as the reasoning behind the concern for this problem. It then goes on to present architecture as a part of the landscape, the solution. As a follow-on from the presentation of architecture as landscape it asks the question: how should we be sculpting landscapes and how have others achieved this sculpting? The methods described in this part form the design parameters carried through the project, from the smallest detail to the large-scale urban intervention.

Part two is an introduction to the Platteklip River in Cape Town, the site upon which the theoretical ideas defined in part one become a physical manifestation of sculpted landscape. It does this in the form of a narrative, collecting the metaphorical, the physical and the tale in a pooling of memories and artifacts, forming the clay from which the sculptor works. The third part, a follow-on from the narrative of the second, identifies opportunity for intervention within the physical and a literal pooling, or a weir located at what is currently a parking lot, 63a Buitenkant Street. The program collected then becomes a part of the locus, a strategic locating of landscape within the city.

Part Four presents the manifestation of the narrative and theoretical as the physical: a mixed use building in the city. It is the collection point where tales from the river pool as a series of experiences and activities. The matter from which the activities are formed is also a museum of narratives from the landscape, carved with boulders of earth, to form a series of experiences as a part of an existing landscape.

Part One: Architecture as Sculpting Landscape

Our cities as the uninhabitable landscape

Most of the building happening today seems to have forgotten that architecture is a shelter for humans to inhabit. It does not regard landscape as a source of knowledge as to how the environment defines the land and how humans interact with that place. The result is that the buildings become isolated entities in relation to where they are. Cities are then largely driven by the temporary aesthetic of the buildings and the mechanical systems from which they function. There is little relationship between the human, the site and the greater landscape, the here and there, that makes a city a part of its cultural and environmental heritage. James Corner, author of *Recovering Landscape*, talks about the return of interest to topics on landscape and how "the consensus is that globalization of culture and the homogenization of building are not all for the betterment of culture, place, and individual well-being."[1] Corner also mentions the large amount of resources consumed by "the hermetically sealed buildings"[2] and their inability to maintain their presence because of the ageing process.

There seems to be a rapid rate of construction within the built environment. Perhaps this is owing to the increase in population. There were about 7.5 billion people living in the world in 2017, and there is an expected 11.2 billion people in 2100[3], meaning that the number of people will increase by about 67% in 83 years. It should also be mentioned that it can be assumed that these people will not be happy to occupy the ever-growing deserts and uninhabitable areas of the earth. They will be a part of the existing cities. This dissertation is not negating the need for construction and growth; it is providing a lens into an alternative manner in which this construction may be implemented.

It is through an acknowledgement of the text above that this thesis proposes that architecture becomes an extension and, therefore, part of the existing landscape, rather than another isolated, air-conditioned world. By drawing from the landscape that which defines the parameters for design, the architect merely sculpts experiences that orientate the user to their physical and metaphorical environment: their landscape.

1.1

1.2

What is architecture as sculpting landscape?

The sculpting of a landscape creates an architectural device that makes one aware of one's position in relation to time. The experiential nature of the architecture ensures that the sculpted cities acknowledge their locus, forming an alternative to the isolated 'temporary' parts that make up the current city. If one were to imagine Cape Town as a continuous landscape sculpted from a single material, one would understand the city as a series of excavations, caves, dugout holes and crevices which are determined by the need to provide shelter from the environment. In stripping the city down to the bare essentials, it is the experience that remains: the architecture. This phenomenon is best described by Adolf Loos in his writings *Architecture 1910 (refer to Figure 1.1)*:

> *When we come across a mound in the wood, six feet long and three feet wide, raised in a pyramidal form by means of a spade, we become serious and something in us says: somebody lies buried here. This is architecture.*[4]

It can be said that architecture falls into a class of perception; it is simply there, not to be interpreted, but rather to be experienced. Loos' description simplifies architecture into three components: a site, the wood; a construction; the mound crafted by a spade; and a desire, the emotion of seriousness. The task of architecture is "to make those sentiments more precise."[5] Essentially, architecture is then a framing device that captures certain aspects and makes them specific and known, as an experience. This is represented diagrammatically in Figure 1.2, and further described by George Descombes as "a precision of disposition,

articulation, arrangement – architecture – so that a pre-existing place can be found, disturbed, awakened, and brought to presence."[6] The question asked as we move on from here is: why are humans yearning for this type of landscape recovery?

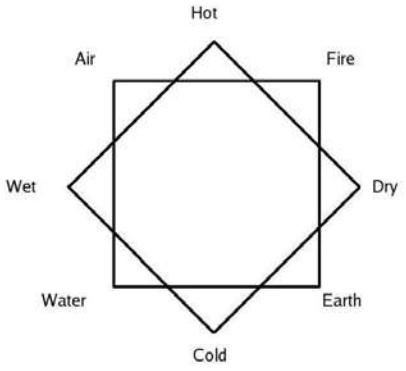
Why are we returning to landscape?

Throughout history people have been sculpting landscape in a variety of ways; making marks and constructing devices that are architecture, or rather, experiences that remind one of their location within time. It is said that the first act of architecture was the fire, the act of bringing people together; and language, from which the construction of shelters started, and thus architecture was born.[7] Gaston Bachelard writes about how humans base embodiment "on a deep, unconscious bio-cultural level, such as entry, roof, hearth and stove."[8] These are the factors that are driving people's yearning for a sculpted landscape: a return to the fundamentals of architecture through experience. It is from this premise that an interest in the primal nature of humans and their relationship with the classical elements, developed.

The yearning of the primal human for a return to landscape is a reaction of humans as observers of their surrounds. When architecture is lost to buildings, humans become detached from the landscape and act as observers. Landscape sets up hierarchical orders between man and man, as well as man and the natural world. One is always an outsider when the landscape is manufactured, for to be "inside" entails the evaporation of landscape into the everyday place or milieu. This is the constructive

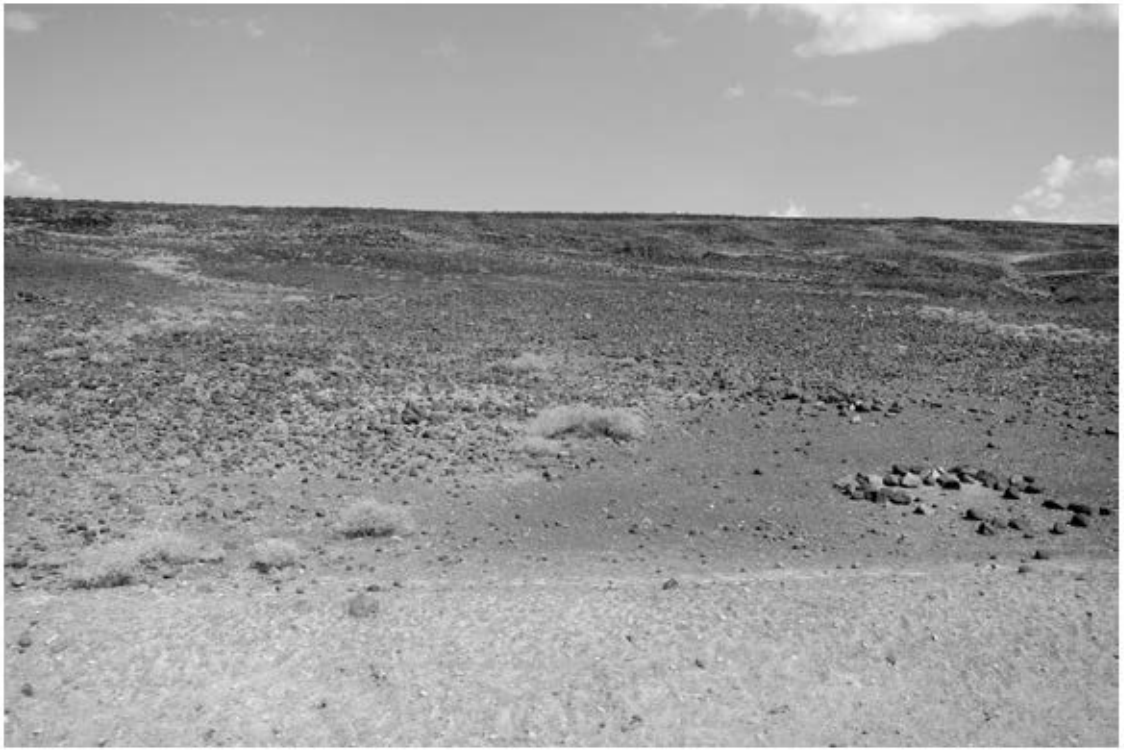
aspect of landscape, its "capacity to enrich cultural imagination and provide a basis for rootedness and connection, for home and belonging."[9] In order for the evaporation of landscape to occur, the architecture must become a sculpting of the existing place. James Corner states that: "landscapes designed in conscience with the annual cycles resonate with their connection to the place and reflect the life within it."[10]

An architecture that is rooted in the classical elements of a place forms this connection with *place*.[11] The Greek elements, understood as earth, air, water, fire and aether (refer to Figure 1.3), can be translated into architecture as the relationship with the ground and its matter (earth); the breath or ventilation (air); the life (water) and the hearth (fire). 'Aether' can be understood as creating the experience or the 'place', the quintessence of that earth. The figure below (Figure 1.4) is a circle of rocks that probably demarcated the home of an El Molo tribesman (Lake Turkana, Northern Kenya). The rocks were left when the owners moved on in pursuit of food or water for their livestock. However, the knowingness of coming across such a display of land art and the memory of what could have happened on that piece of land was the experience similar to being confronted with the mound that Loos talked about. It was the most basic kind of connection with the ground that created an experiential feeling that made architecture: a place that once was within a field of stones. It is the yearning for the primal connection with the most basic of manipulations of earth that this thesis proposes as the reason behind humans' need to recover landscape.



1.3 The Classical Elements

1.4 An El Molo abandoned hut



Methods for sculpting a landscape

Becoming the Farmer

It has been established that our yearning for the return to a sculpted landscape is based on an intuitive response of the human to be a part of the landscape, through experience. This experience is based on the elements of a place and is a simple device to orientate the dweller within time and place. It is architecture. The question that is considered as we move on from here is: how does an architect achieve such an experience? Adolf Loos states; "the architect… has no culture."[12] He goes on to explain how the architect lacks the certainty of the cultured farmer, for the farmer knows the land.[13] The farmer has the embedded knowledge of the place and works from that to create beauty.[14] He does not come from afar and impose ideas and strategies onto a land he does not know. This thesis, therefore, proposes that it is only through a deep knowledge of site that an architect can sculpt an extension of the existing, and capture the beauty of a place as an experience.

Reading Site

The process of developing an embedded knowledge of *place* is described by George Descombes, as an investigation into the "traces"[15] that exist. These traces are sets of dynamic relationships "generated by different sources, forces, activities, events and actors"[16] over different periods of time. The investigation is an on-going understanding of the land, the existing and the future, allowing the reader to gain a position within the shifting timeframe of a place. It is through researching both the metaphorical and physical aspects of a place that one uncovers the shifting narratives over time, the tools for developing a sculpted landscape.

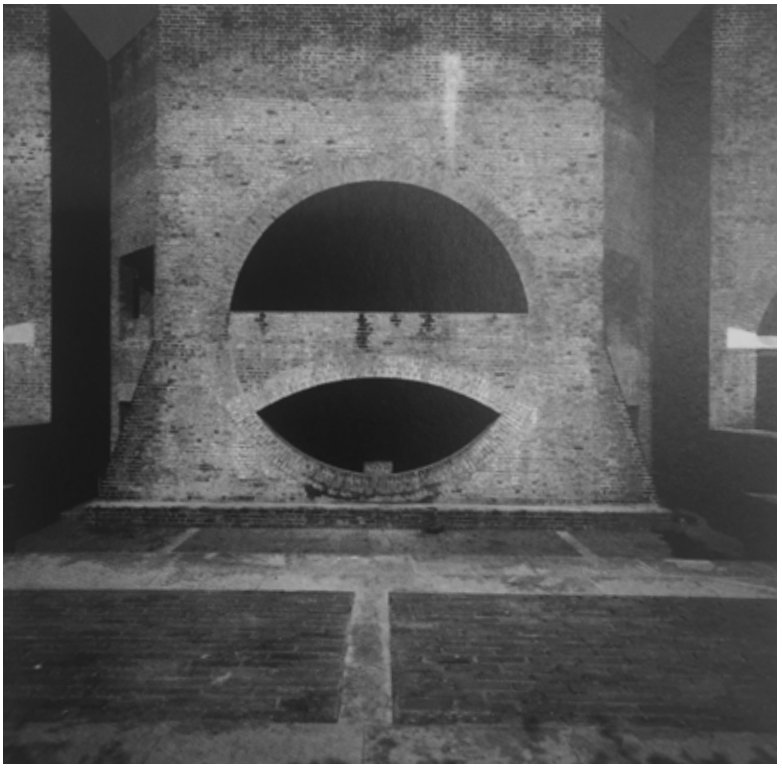
Descombes describes below how he approaches the discovery of a site:

> *I began thinking about the project by walking again and again around the site. I spent enormous amounts of time simply looking at things. I tried to look out for things that we normally do not see, such as flowers and mice, and anything else that moves around covertly, with the wish to remain undisturbed. At the same time, I wanted to leave a mark of our own time, to overlay an unequivocal trace of our activity. In other words, I wanted to respect the nature of the site and its history, but without nostalgia, without sentimentality.*[17]

Descombes continues to describe how he consulted scientists, botanists, artists, ecologists, historians and geographers, all helping "to define the thickness of the site's cultural legacy".[18] It is, therefore, really about knowing the nuances of a place that allows one to respond, through empathy, in an appropriate manner.

Matter & Time

Essentially, sculpting a landscape is manipulating matter to reflect time and memory within an experience, for without someone to experience it, there is no time, nor memory. Juhani Pallasmaa talks about the "collapse of time"[19] that is reflected in most contemporary architecture. Contemporary projects seem to focus on the instant rather than experiment with a continuum of time in matter.[20] It is, therefore, matter through which time can be created. Materials like stone, brick and wood

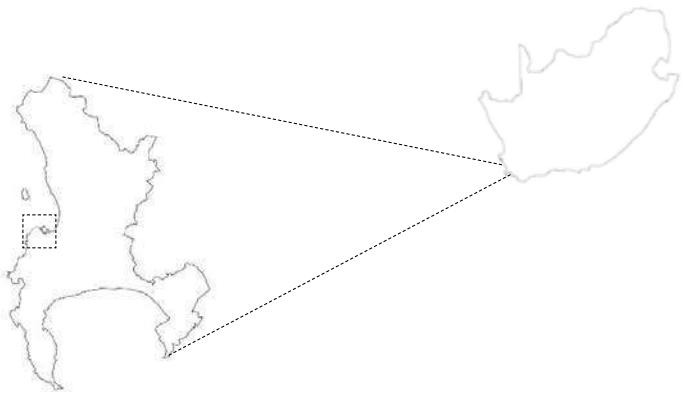


1.5 Material, form and structure:
"Brick wants to be an arc"[25] - Louis Kahn

express time through their patina of wear, rather than those of sheets of glass, metals and synthetic materials that do not represent their wear and age, their memory.[21] Louis Kahn also mentions "the marks that reveal how a thing was done."[22] It is through these marks, the presence of a process and the understanding of the intrinsic qualities of a material, that a platform, from which memory and time are developed, is established. Constantin Brancusi explains how we should be working with materials:

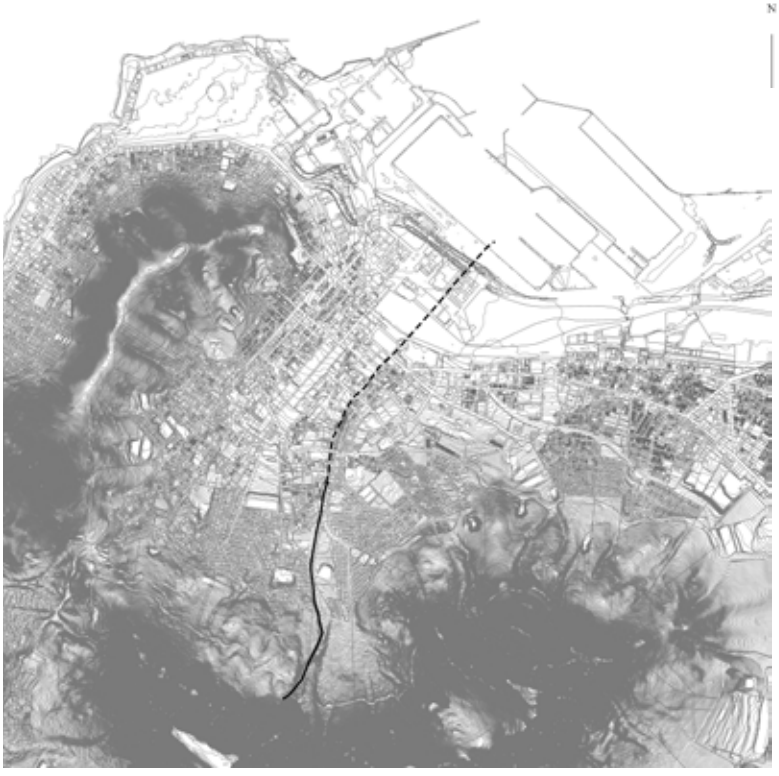
> *You cannot make what you want to make, but what the material permits you to make. You cannot make out of marble what you would make out of wood, or out of wood what you would make out of stone… Each material has its own life, and one cannot without punishment destroy a living material to make a dumb senseless thing. That is, we must not try to make materials speak our language; we must go with them to the point where others will understand their language.*[23]

We measure spaces by moving through them and developing a narrative based on memory and experience. It can be surmised that the marks of making, the matter that ages, and the sequence of experience are tools to be used in developing a "museum of time"[24]. The theory described in Part One is to be applied to a practical location; the Platteklip river, in Part Two. It is through the methods described in Part One that Part Two is based.



2.1 The location of Cape Town within the Cape Peninsula and South Africa

Part Two: The forgotten river, the reading of a site

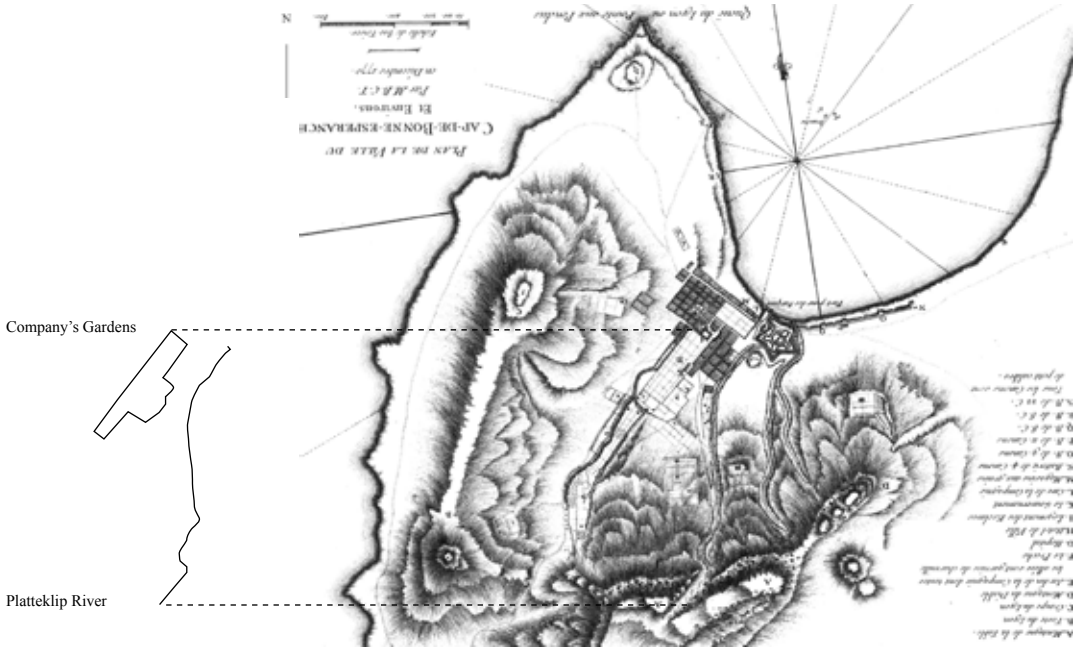


2.2 The Platteklip River, Cape Town

A collection of memories: Reading traces

The Platteklip river, seen in Figure 2.2, forms the area of inquiry and broader site upon which the theories described in Part One are practised. It is a perennial river that holds many a story from before the time when Cape Town as a city existed, to the severe water crisis that we find ourselves within today. It runs through time and collects memories and matter along its course. Part Two garners the memories and materials in a weir of information from which a project is to be developed.

There are many rivers that run off and from Table Mountain into the Atlantic Ocean. Some are fresh enough to drink from, others not. The Khoena, the indigenous people of the Cape, named the rivers from which they could drink, the "Sweetwater rivers" or "Camissa rivers"[1]. It was at the mouth of the main Camissa river that a group of people called the "Goringhaicona" established the first settlement in the Cape.[2] Later Dutch settlers planted a fruit and vegetable garden on the banks of the river to feed passing sailors.[3]



2.3

The historical map (Figure 2.3) shows how the river and gardens formed the structure from which the settlement evolved into the city that sits within the amphitheatre of Table Mountain. This dissertation looks to the Platteklip river as the water source that provides life to the city and holds many of its stories on its banks, for it was once said that:

> *When one uncovers the history of a 'place' it is through means of title deeds — ownership and power. However, when one uncovers the history of a place, through its water - one uncovers the popular history of that place. As water follows the path of least resistance, it knows no boundaries.*[4]

It has since been established that the water system known by the Khoena includes a total of 36 springs and four rivers.[5] These water sources were slowly engulfed by development as Cape Town grew. Currently some still exist, but are not known or used, while the rivers appear in storm water systems integrated into the city. The non-profit organization, "Reclaim Camissa"[6], has done research into the location of the springs, the quality of the water, the history of the Khoena people and their heritage, as well as proposals as to how the government could use these water sources.[7] Although this is a resource to be acknowledged, I have tried to extract the tales of one specific river rather than concentrating on the *Reclaim Camissa* project and its ideas.

2.4 Points along the Platteklip River

The river runs from the top of the Platteklip Gorge (18 in Figure 2.4) down the steep faces of Table Mountain Sandstone. It pools at the confluence of the Platteklip and Saddle Streams where it is known as the original 'Lady Anne Barnard's Bath'[8] (17 in Figure 2.4 and Figure 2.5).

The river forms a spiritual gathering place for many religions. The Zion Christian Church (ZCC) uses the waterfall (17 in Figure 2.4) as a sacred place for baptism and worship (Figure 2.6); the local Rastafarian KhoiSan community uses it for their spiritual connection with God and the water, as well as a source of life to the indigenous fynbos 'muti' that they harvest from the mountain. The waterfall is also home to some of the Kramats (burial places of Cape Town's Islamic saints) that occur at various water points around the mountain to form the 'Circle of Islam'.[9] The Kramat of Seyed Abdul Haq al Quaderi is found at point 16 on Figure 2.4 and can be seen in Figure 2.7.

Point 15 in the Figure 2.4 marks the position of the old slow sand filter, built in 1869, along the Platteklip river.[10] Although the water was already pure and to this day still does not require chemical treatment, the sand filter was built in an attempt to further purify and remove the brown colour of the water (probably due to the minerals washed from the rocks).[11] Interestingly, it would not take much to restore the filter and use it for water purification and gathering of water for current Cape Town residents' use.[12]

The Platteklip washhouses and Raaswater Wasplaas (points 11, 12 and 13 on Figure 2.4) were part of the original mid- to- late 19th century wash-houses where washerwomen worked. The Platteklip stream runs through what is now Deer Park, where people walk dogs, exercise and practise other recreational activities.

2.13 An image showing stormwater tunnels, similar to the Platteklip River tunnel, under the Grand Parade exposed during excavation

The ‘Field of Springs’, point 9 in Figure 2.4, is where the “Stadtsfontein”[13] spring is located and is a key factor as it is responsible for the perennial nature of the river (Figure 2.9). This spring produces in excess of 2.5 million litres of water that filters into the Cape Town stormwater system daily.[14] It dates back to 1686 when the van Breda family owned the rights to the water.[15] Later, a system of sluices (‘lei-water slote’) was installed and the ownership of the land was taken over by the municipality.[16] It has since been recorded that at the end of the summer, 2008, the flow measured within the 914mm internal diameter brick stormwater pipe, was in excess of 40l/s and is not sensitive to seasonal changes.[17]

Today, the Platteklip stream runs beneath the surface of Buitenkant Street, one of the oldest streets in Cape Town (Figure 2.11). It was a lei-water sloot that formed the eastern boundary of the settlement, ‘buiten’ meaning ‘outer’ ‘kant’ meaning ‘side’. It now forms part of a buffer zone (marked as 3 in Figure 2.4) between the established city centre and the area where District Six would have been.

Rust en Vreugd, which also lies on Buitenkant Street (point 5 on Figure 2.4), was built as a homestead by Willem Cornelis Boers, between 1777 and 1782. It is now a National Monument and home to the Iziko Museum offices and art gallery (Figure 2.12).[18] The Platteklip stream eventually runs through the Cape of Good Hope Castle’s moat and then out into Duncan Dock.[19]

2.5

2.6

2.7

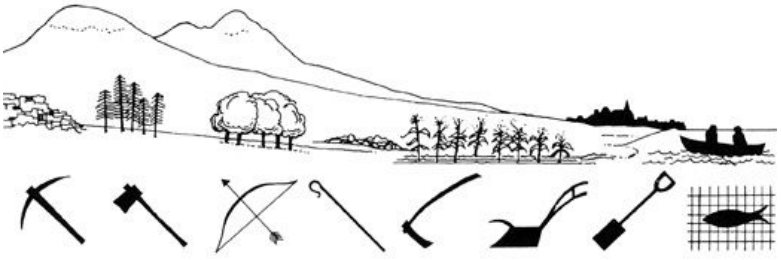
2.8

2.9

2.10

2.11

2.12



2.14 Patrick Geddes' valley section

2.15

2.16

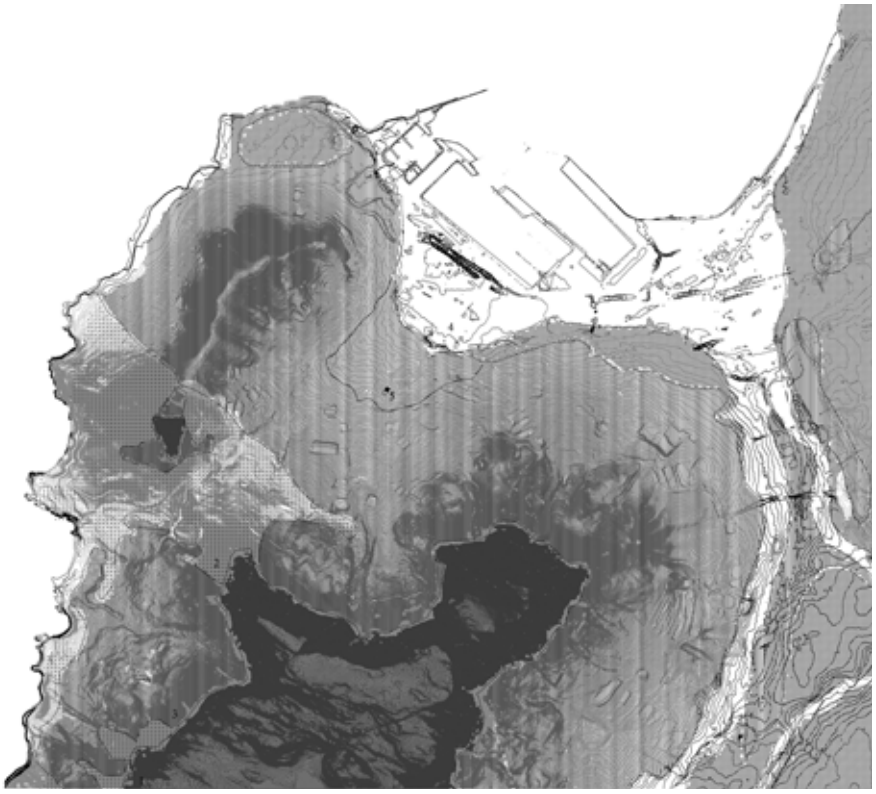
2.17

A pooling of matter

The rocks and landforms that make up Table Mountain determine much of what happens in the soils, and the vegetation, and therefore the activities that occur on the land. The Scottish biologist, sociologist, philanthropist and geographer, Patrick Geddes, talks about how the soils of a land determine culture; he explains how the section through a valley becomes the plan of the civilization (Figure 2.14).[21] It is, therefore, interesting to start an investigation into the 'tangible' through an understanding of the rocks and soils that make up the mountain.

The river runs through a natural amphitheatre formed by the world famous flat-topped Table Mountain, also known as Hoerikwaggo or Tafelberg.[22] The mountain and the city bowl are made up of sandstone, granite and shale in varying degrees of decay. The hard durable sandstone forms the angular blocked cliffs, stacked to form the tops of Table Mountain (Figure 2.15). The granite, an igneous rock crystalized from liquid magma, forms the round boulders so unique to Lion's Head and the coastal areas of Camps Bay (Figure 2.16), and the shale forms the flatter, lower, generally built-up areas of the city (Figure 2.17).[23]

The gorges on the slopes of the Mountain are formed from faults in the rocks where movement occurs. The rainwater runoff causes erosion along these faults and slowly sculpts the gorges out of the steep faceted faces.[24] Physical weathering, the forcing apart by ice or plant roots as well as chemical weathering through water, breaks up the rocks along these faults to form the nutrient rich dark clayey soils washed down the rivers to collect in the city bowl (Figure 2.18).[25]

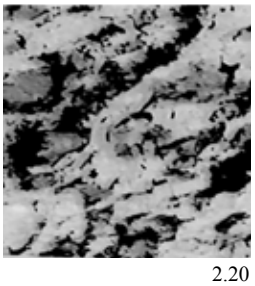


2.18 A geological map showing the rock types that make up the topography of Cape Town

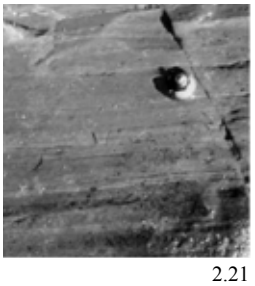
1. Table Mountain Sandstone
2. Cape Granite
3. Malmesbury Shale
4. Sand/ reclaimed land
5. Clay deposits

2.19 A map showing the systems of rivers and catchment areas on Table Mountain, the main reservoirs on top of the mountain as well as the flood plains of the Black River and the level of the sea should the ocean rise 6m, as predicted.

Professor John Compton, author of the book *Rocks and Mountains of Cape Town*, explained some of the more specific details relating to how the rocks of Table Mountain form clays. The Table Mountain Sandstone weathers away to a Silicon dioxide (SiO2), which is what we know as sand.[26] There are no clays in this weathered rock. The Cape granite contains white megacrysts of 'Feldspar' (H2CO3) (Figure 2.20) which when weathered, forms Kaolinite clays (clay + SiO2 + K and other minerals).[27] Kaolinite has a history of being mined in various locations around the Cape Peninsula such as the Noordhoek and Simonstown quarries.[28] This clay is the purest kind of clay and so is baked at a high temperature and when mixed with other materials, is used to form porcelains and glossy papers.[29] Malmesbury shale is a sedimentary rock type (Figure 2.21) and when weathered, it forms a type of expandable smectite clay or a less expandable illite clay.[30] These are the clays that usually create cracks in the foundations of buildings as they expand and contract according to the rainfall season. Smectite clay is the most weathered of the clays and can be used to make clay bricks and pottery clay.[31]



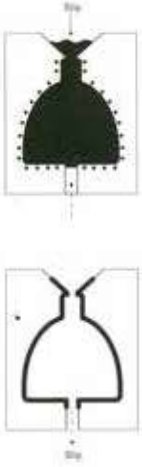
2.20



2.21

The presence of clay

The presence of clay around the Platteklip river initiated an enquiry into the applications of clay. A complete investigation into the history, properties, production processes, applications and life cycles of ceramics was done; however, the most important of the research is summarised below:



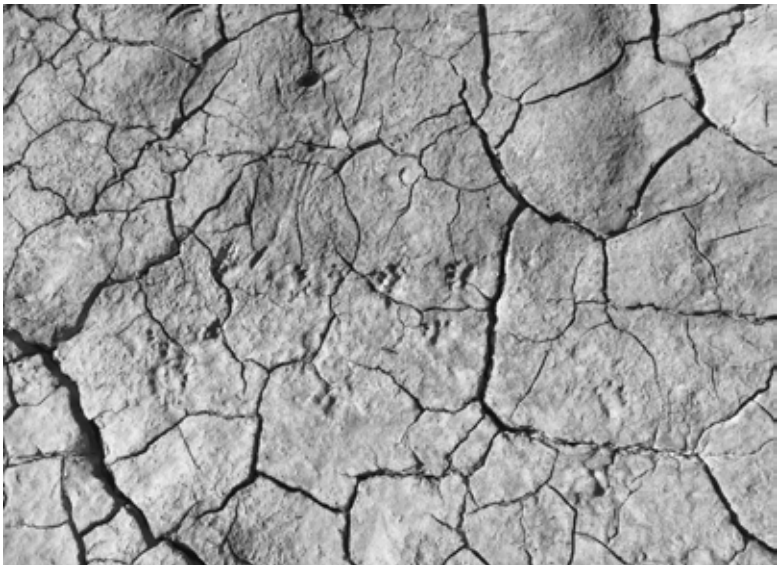
2.22

Slip cast ceramic elements

Slip casting uses a viscous liquid clay that is poured into a plaster mold (Fig. 2.22). The process of slip casting is shown as a step by step method in the photographs on the following pages (Fig. 2.25-2.31). It can either be done as solid casting where the slip fills the mold and is left to dry throughout, or the slip could be used in a hollow casting. To achieve hollow castings the slip is poured into the mold and left for a certain amount of time. The time for which it is left for determines the thickness of the walls of the object. Once the time has lapsed, the excess slip is drained from the centre of the mold leaving a coating of clay. This is then left to dry, shrinking due to evaporation of the water in the slip and therefore releasing the clay from the mold. Hollow slip casting is used in the manufacture of sanitary ware and crafted parts.[32] Any type of clay (earthenware, stoneware and porcelain) can be used in the slip casting method; however, they do result in elements with very different qualities.

Earthenware, when fired unglazed, creates a matt clay type finish that is durable and not too brittle. Porcelain, when fired unglazed as a slip cast hollow element, produces a semi-translucent milky ceramic piece.[33] These can be used as architectural elements that are massproduced.

2.23 Porcelain slip cast vessels



2.24 Earthenware slip cast vessels

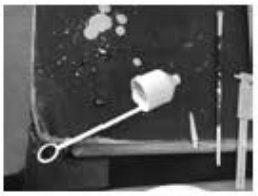


Figure 2.25 (opposite top)

Slip casting moulds

Figure 2.26 (opposite middle left)

Testing slip for consistency and fixotropy (running time).

Figure 2.27 (opposite middle right)

Seconds cup to test the fixotropy of the slip. It should run through the cup between 13-18 seconds.

Figure 2.28 (opposite bottom)

Pouring slip into moulds

Figure 2.29 (top)

Slip left to set for time, depending on thickness of wall rewquired for ceramic element

Figure 2.30 (middle)

Slip poured out and clay element left to dry until bone dry. The clay should have pulled away from the mould during drying.

Figure 2.31 (bottom)

Dried element ready to be trimmed and removed from the mould.

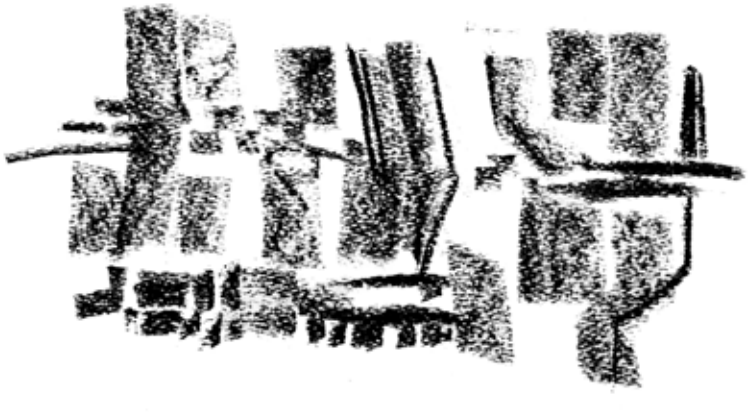
2.32 Pinch pots investigating the void that shapes

The void that makes the vessel

The building was imagined as the vessel sculpted to contain the experiences within and manipulate the weather outside. Martin Heidegger talks about the void as the building and the matter that is sculpted around the void as the vessel:

> *From start to finish the potter takes hold of the impalpable void and brings it forth as the container in the shape of a containing vessel. The jug's void determines all the handling in the process of making the vessel. The vessel's thingness does not lie at all in the material of which it consists, but in the void that holds.*[34]

It was from this premise that the void and the solid became the two elements from which the building was made. The solid chunk of earth was the vessel that creates the void. Investigations into how one sculpts actual vessels out of clay where carried out, and a hand for sculpting the void was developed. The pots in Figure 2.32 are the first of these investigations and a sense of how it feels to work the relationship between void and solid was practiced.



2.33 Table Mountain Sandstone Drawn

2.34 Table Mountain Sandstone

Investigating Boulders

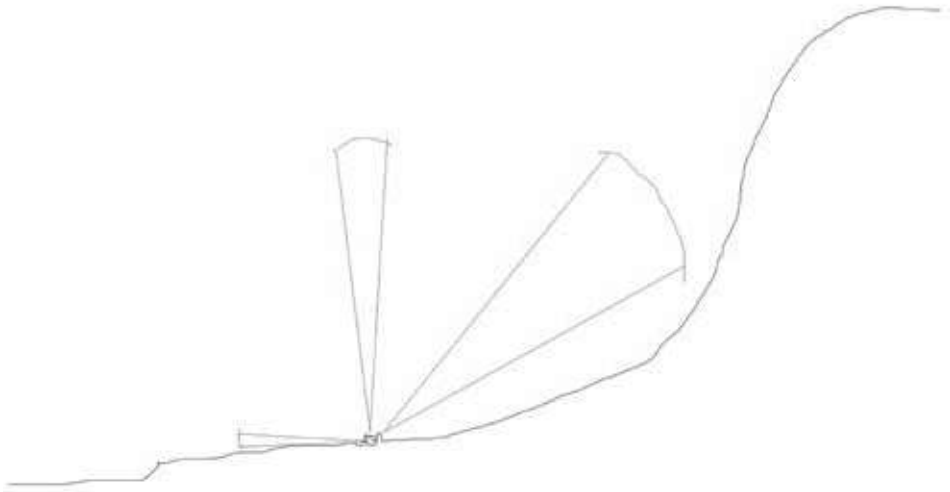
Table Mountain has its own way of sculpting voids. It is in the form of cracks and crevices that the void becomes a part of the Table Mountain Sandstone (Figure 2.34). A set of spatial experiences were developed from the forms of the rock and simplified into a series of architectural boulders. These boulders became the building blocks from which new spaces were developed and used as a basis for building the vessel. The Figures 2.35 - 2.37 are a representation of the types of spaces created from the architectural boulders.

It was observed that is was the rubric nature of the sandstone that creates this dynamic balancing of mass on mass. The cracks occur over time and develop opportunity from weathering and erosion. The light falls onto surfaces and creates shadow. These are the elements from which the design evolved.

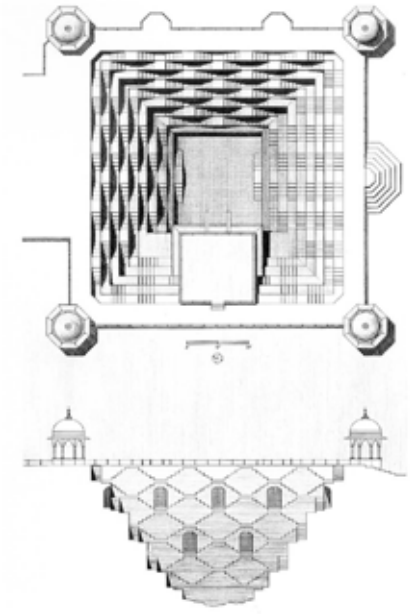
2.35

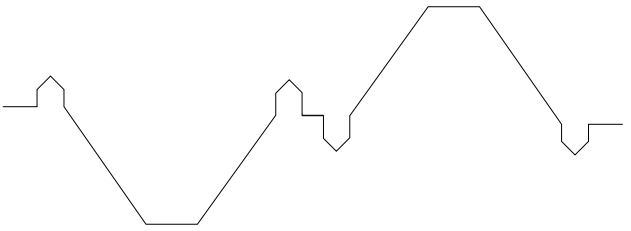
2.36

2.37



2.38 An early section through Table Mountain, the proposed sculpted landscape, and the ocean; as a continuous horizon

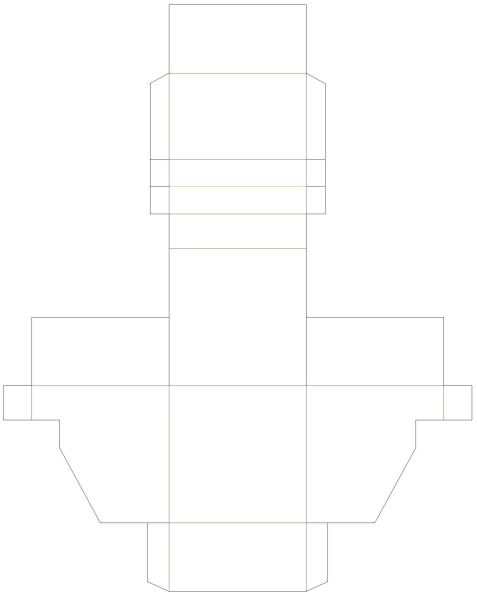


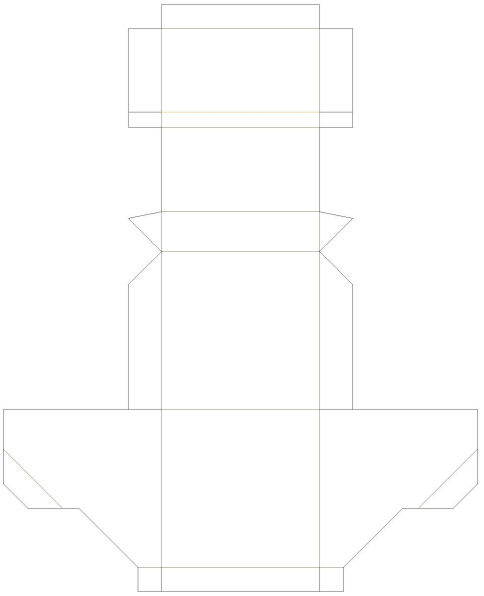


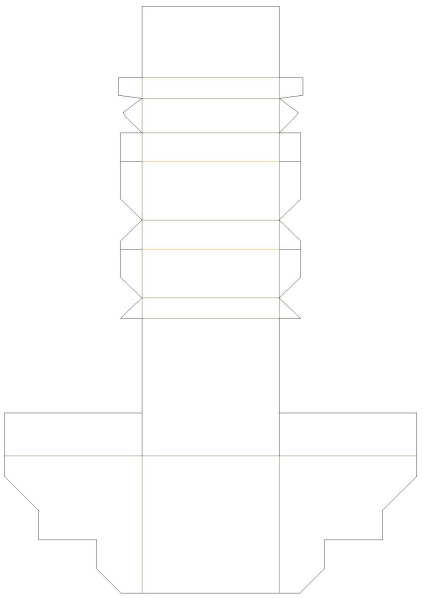
2.39 An early investigation into architecture that pulls the sky down and extrudes the earth upwards.

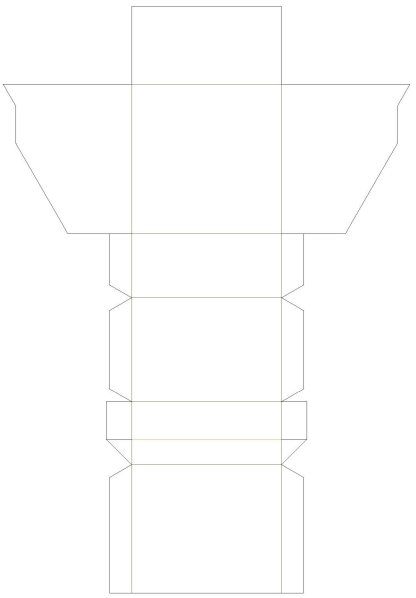
Where heavy meets light: Where the earth meets the sky

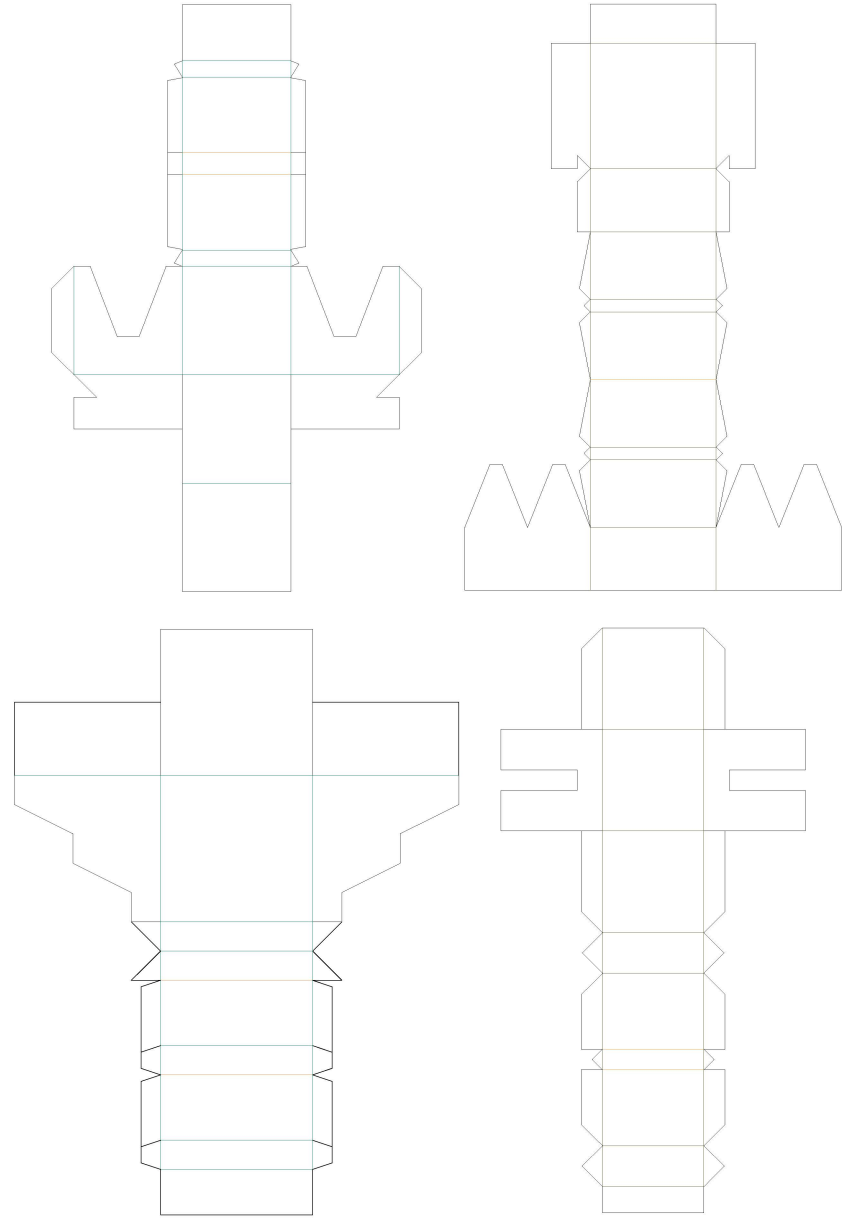
There was something about this experiment that captured the quality of matter and architecture. It is about the horizon, where the heavy earth meets the light sky. The plaster boulders were transformed into flat paper planes and then folded into airy light clouds. This experiment inspired the thought of architecture as the horizon. The element that pushes the earth up to reach the sky and pulls the clouds down to meet the solid earth: a line where the solid meets the light. The section shown in Figure 2.38 was an early investigation into how the building forms a part of this horizon line – a manipulation of the section to push the earth upwards and pull the sky down, similar to that which is presented by Table Mountain.











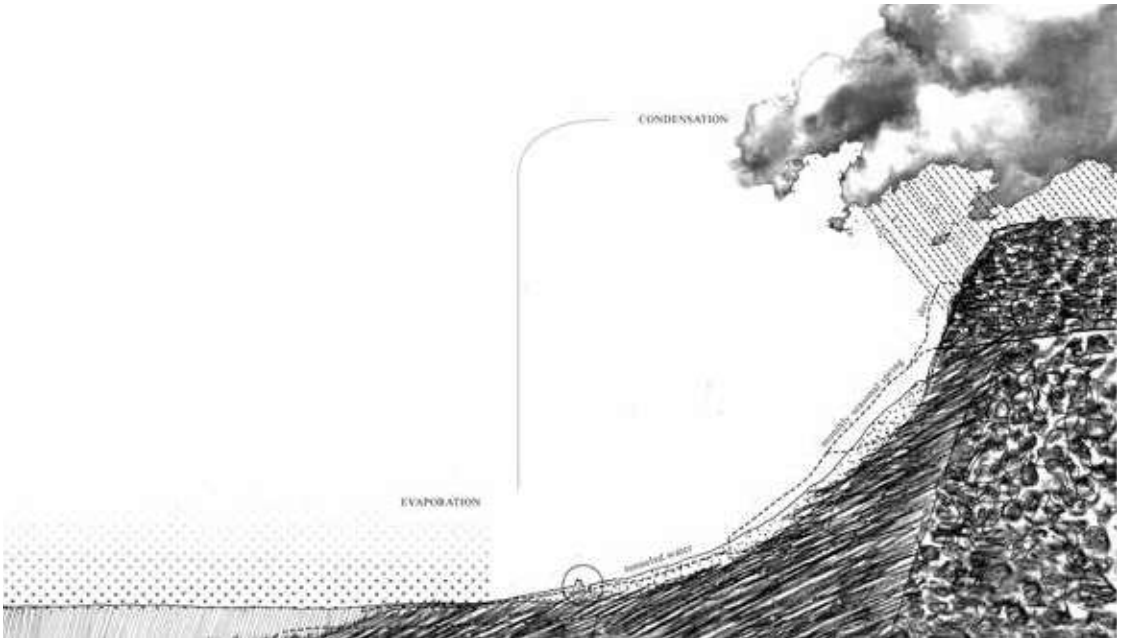
2.40 Paper boulders

2.41 A herbarium of the indigenous medicinal fynbos and a diagram of the essential oil distilling process

Alchemy

Gundula Deutschländer, a botanist, alchemist and medicinal plant specialist, was consulted on the plant matter that occurs on the mountain, and specifically on the useful plants. These are the herbs that are harvested by the medicinal Rastafarian healers to make the 'muti' previously mentioned[35]. Figure 2.41 is a herbarium of various indigenous plants and their uses.

Mr Andries van der Walt was consulted on the process of distilling essential oils and the requirements for such a plant. The scale of the plant would have to be generally small for 'show' as the plant matter needed for a larger scale plant would damage the fynbos along the specified river.[36] The idea was that the fynbos should be grown on the building, as well as harvested in a sustainable manner from the wild.



2.42 A herbarium of the indigenous medicinal fynbos plants

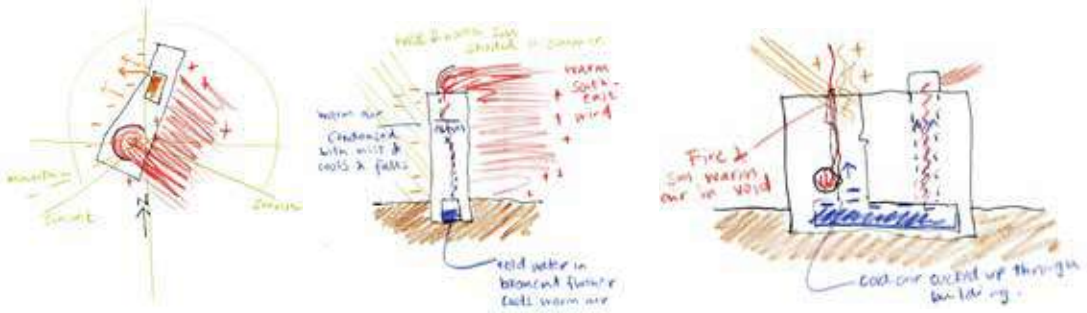
Energy and Perception

Humans' level of comfort is determined by the effectiveness of the shelter which they inhabit. It is therefore important to look at the climatic conditions of the site to conclude how it could be possible to build passively: utilizing the natural elements to create comfortable environments. *Energy and perception* forms yet another layer of understanding of the site.

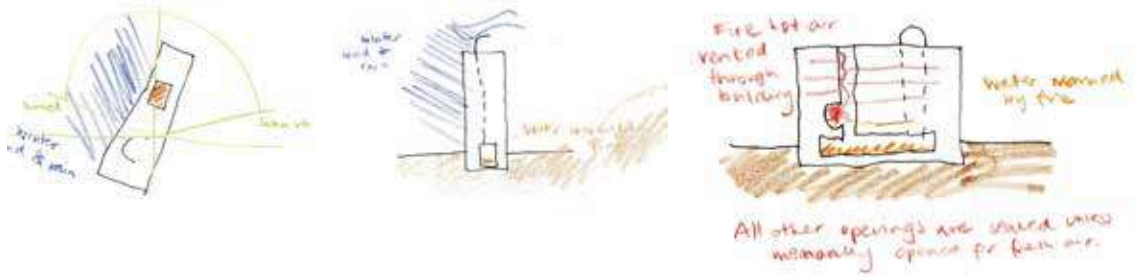
Cape Town is located within the Southern Hemisphere in the province of the Western Cape in South Africa and falls within the Mediterranean climatic region. This climatic zone is determined by two seasons, a warm and dry season that occurs from October to March, and a cooler wet season between April and September. This dissertation proposes that the comfort of the inhabitants of a building is specifically through naturally ventilated, passively designed spaces where the occupants are in control of their clothing levels and openings.[37]

Warm Period

The months of October to March (warm period) experience an average mean monthly temperature of 21°C with daily fluctuations of roughly 10°C and peaks between 25-30°C.[38] The fluctuations in temperature allow for night flushing to be used to cool the building. The sun sits at a high angle of 79.5° at the summer solstice, resulting in the east and west facades receiving increased radiation.[39] The eastern radiation warms up a cool building; however, the radiation from the midday northern sun and the late afternoon western sun overheats the building. Shading is therefore required on these facades: horizontal for the north and vertical



2.43 Diagrams showing how the building works during the warm period



2.44 Diagrams showing how the building works during the cool period.

for the western facades. Owing to the lower level of rainfall, the relative humidity lies at about 30% and so evaporative cooling could be used as a cooling device. This, together with the stack effect, sucks the cool air through the building. The South-south east wind is a significant factor to consider, with an average speed of 7m/s[40] blowing for 20% of the warm period. It is responsible for the summer "Table Cloth" of cloud that covers Table Mountain occasionally, and supplies 25% of Table Mountain's annual rainfall.[41]

Cool Period

The months of April to September (cool period) experience an average monthly temperature of 13°C with daily fluctuations of roughly 10°C, with daily peaks of 22°C and lows of 10°C.[42] The sun sits at an angle of 32.7° at the winter solstice; however, the radiation is welcomed to warm the building.[43] Shading should be designed to allow for this during the cooler period. The warmth captured needs to be maintained and so an insulated building is best with manually adjustable windows for the required fresh air. Heating of the building is done through the use of thermal mass such as earth and bricks. The addition of a fireplace can work in the method of the ancient Roman's hypocaust systems, to warm the building through vents of heated air. The higher precipitation that occurs during this time amounts to a total of up to 80mm a month[44] and accounts for up to 70% of the annual precipitation.[45] Stormy cold fronts are driven into the peninsula by the North-westerly atlantic winds that have an average speed 4.5 m/s.[46] It is owing to the high rainfall that the relative humidity lies at about 50%.

3.1 Locality Plan

Part Three: Becoming specific and collecting program

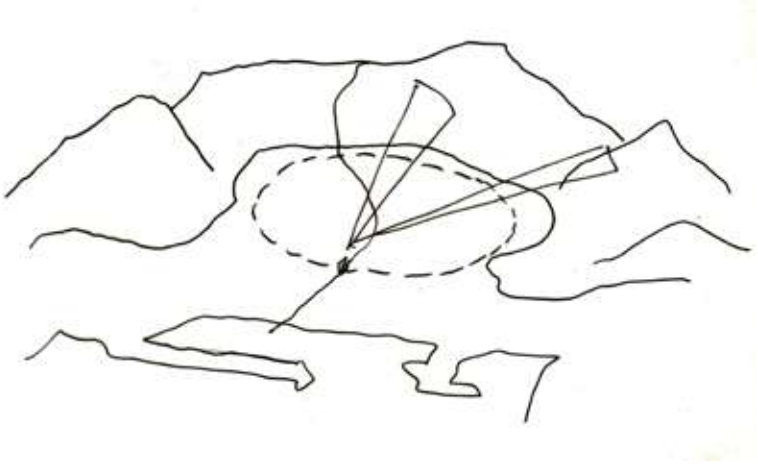
3.2 63a Buitenkant Street as a parking lot

63a Buitenkant Street

'Becoming specific' required the selection of a site that was to lie along the Platteklip river: a place that allowed for the pooling of the metaphorical and physical tales of the river to manifest. It was through observing the banks, and what would have been the banks of the river, that number 63a Buitenkant street was found (refer to Figures 3.1 and 3.2): an empty lot of earth, exposed to the grittiness of the constructed topography of the city, adjacent to the tunnel in which the river now runs and currently used as a parking lot. It was seen as an opportunity to create a weir within the river where the natural landscape of the mountain links the topography of the sky with the reality of the constructed city.

A physical pooling

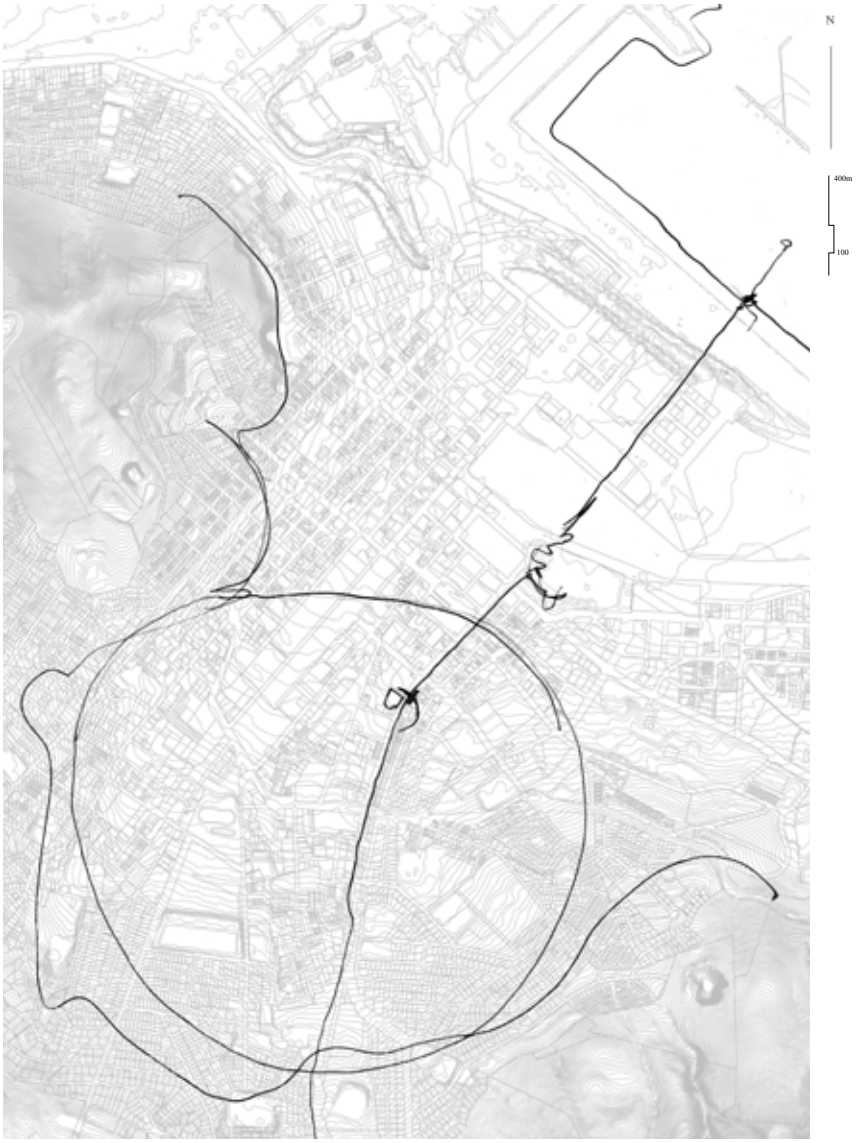
Cape Town as a city sits within a geological amphitheatre (refer to Figure 3.3). The city is held by the solidity of Table Mountain and the bowl backs up against this solid mass (refer to Figure 3.6). The site chosen forms a completion of the bowl and a weir along the Platteklip River. Figure 3.7 shows how this diversion of the river determines the development of a building and so ties to building from the scale of the city, the mountain and the bowl, right down to the scale of the entrance to the building and the smallest details. The material tectonic of the building is determined by the site as earth, to be sculpted as if it were by the river.



3.3 Cape Town as an amphitheatre

3.4

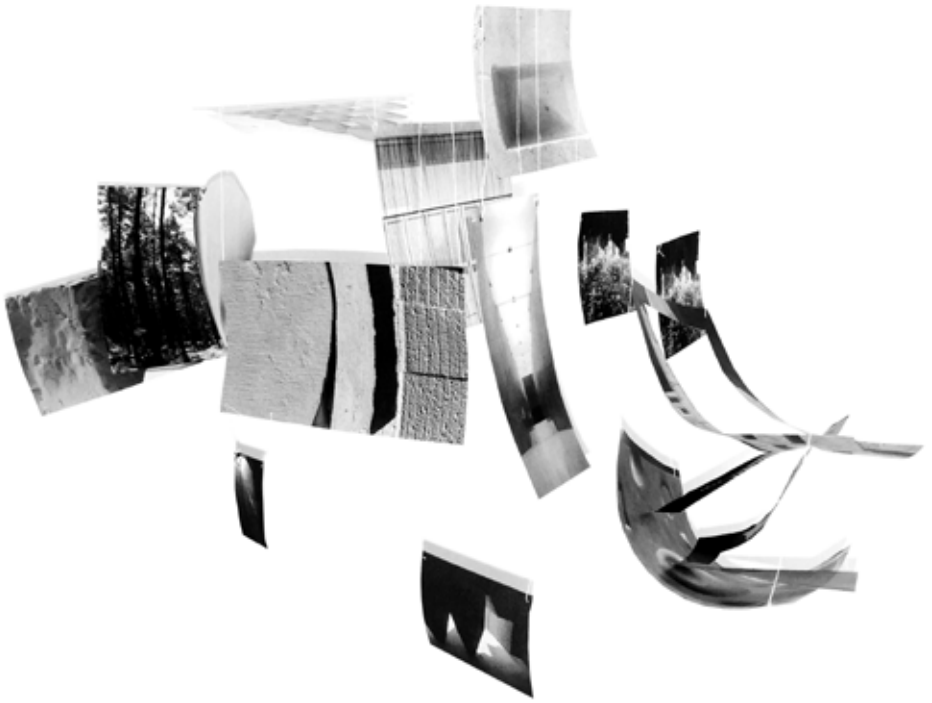
3.5



3.6 Locality Plan - completing the bowl

1 Site
2 Rust en Vreugd
3 Buitenkant Street
4 Roeland Street

3.7 Site Plan - diverting the river



3.8 Programmatic spatial collage

A metaphorical pooling

The programing of the site was simply the collection of that which already exists along the river into a mixed use building in the city. The reading of site in the previous part forms the matter from which these activities are garnered. The first factor was that of the presence of water. Water is both healing, restorative and necessary, and so water forms the foundation of the building: an underground public pool that is a diversion of the river, becoming a place for anyone to use.

Above the excavated pool are a series of creative spaces to work with clay. These include a clay workshop where children, their parents, young adults and their grandparents can come to paint already-made clay pieces. There is provision for the spaces required to produce these ready-made elements, as well as a series of different sized studios that could be used for private artists on a longer term basis. The studios also function as flexible spaces for any sort of event or exhibition.

Fynbos found on the mountain manifests in a small scale essential oil distillery, providing fynbos oils for sale and for use in the pool as natural antiseptics. The hydrosol by-product of distilling oil is sold in a café along with coffee and refreshments: a resting place in the city and a series of gardens throughout the building are examples of the fynbos to be harvested in a sustainable manner.

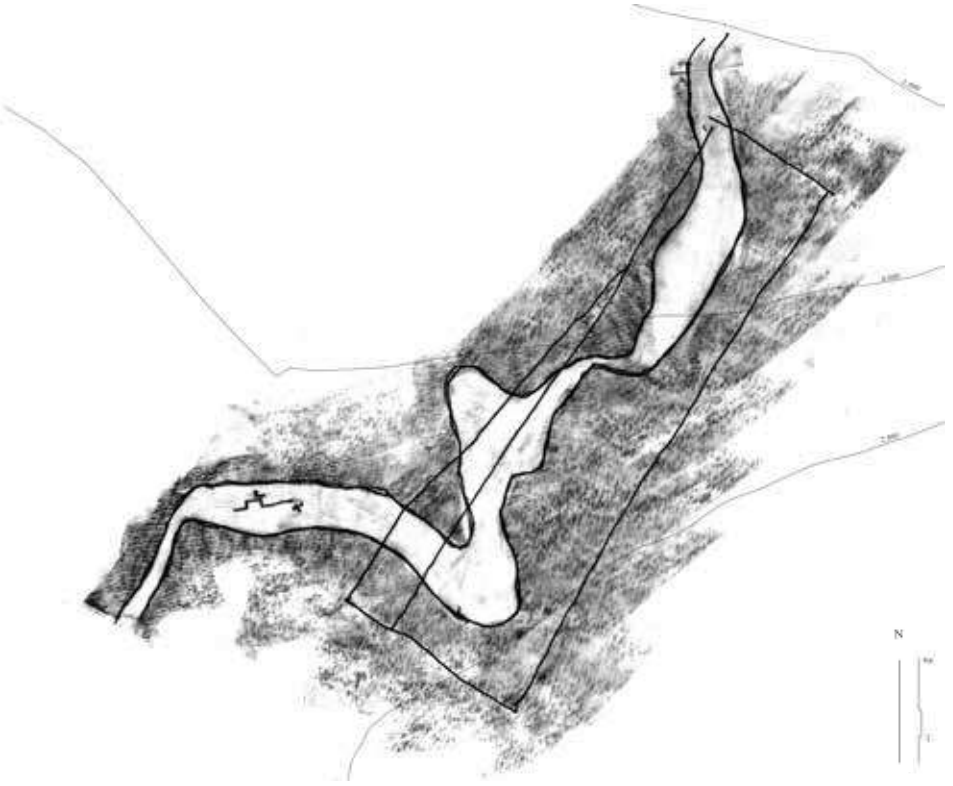
General daily living forms the program for the rest of the building: living units provide homes for urban dwellers and working spaces are available in the form of co-work offices. Some of the homes have studio offices where working from home becomes an option.

The building becomes a manifestation of location: gathering from the matter and history that is there and blending it with the emerging creative urban dweller that is currently occupying this gritty part of the city.

Part Four: Design development

The building as boulders and void

4.1

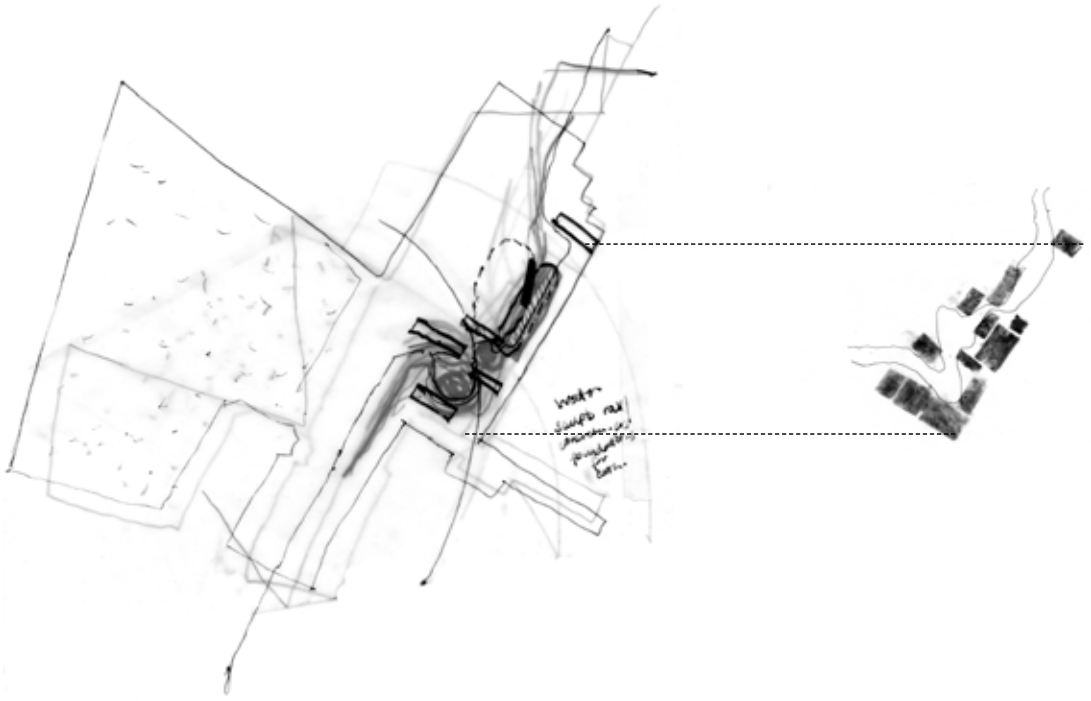


4.2

Imagining the river

Drawing the River

In commencing with the design for the chosen site, the obvious place to start was the water from the Platteklip river. The river was the reason for the larger urban scale investigation into this area and therefore forms the foundation upon which the design is based. Water is one of the main factors eroding the mountain: sculpting its way through the landscape according to the materiality of the land it encounters. It was from this premise that the river was imagined as it could have been long ago, moving through site. Figure 4.2 is a drawing of this imagination and a point from which the architecture could begin. The water became the guide and orientation device that one would constantly be brought away from, and back to, whilst moving through the building.

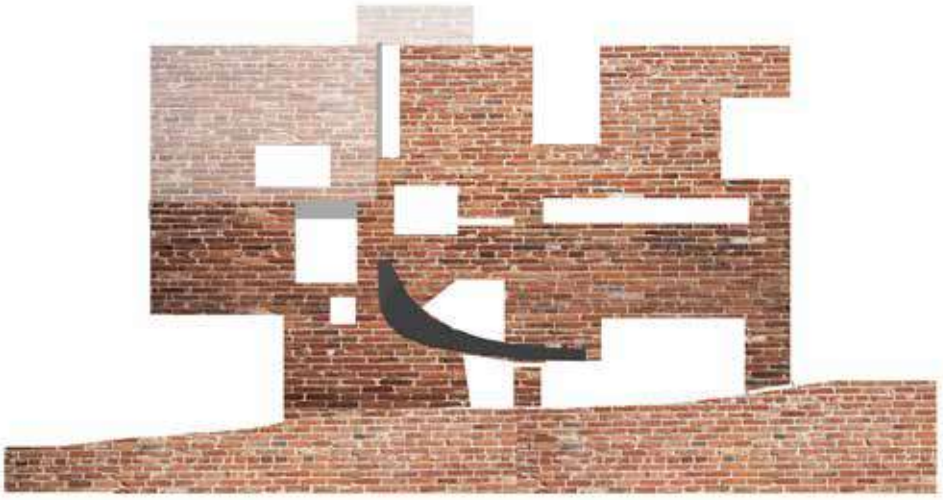


4.3 Diverting the river

4.4 Boulders as diversion elements

Imagining the river instigated a set of questions as to how one may divert some of the water to form a weir: a slowing down of the currents and a pool from which possibility could evolve. Boulders, extracted from the mountain, became the solid elements from which this diversion was made: strategically placing the solid masses within the river created both interstitial spaces between the boulders, as well as heavier spaces within the boulders. Figures 4.3 and 4.4 are early investigations into this diversion of water. The study of making boulders and experimenting with the stacking of them in Part Two, informed the manner in which balancing masses achieved the cracks and ‘rubric’, the set of instructions and rules, that became a part of the design parameters.

It is with this knowledge that it becomes important to understand the manner in which the building is used and experienced. The following text: Arrival, explains in a more general way, the approach, use and experience of the spaces in an imaginary walk through, with reference to plans, sections and elevations of the design.

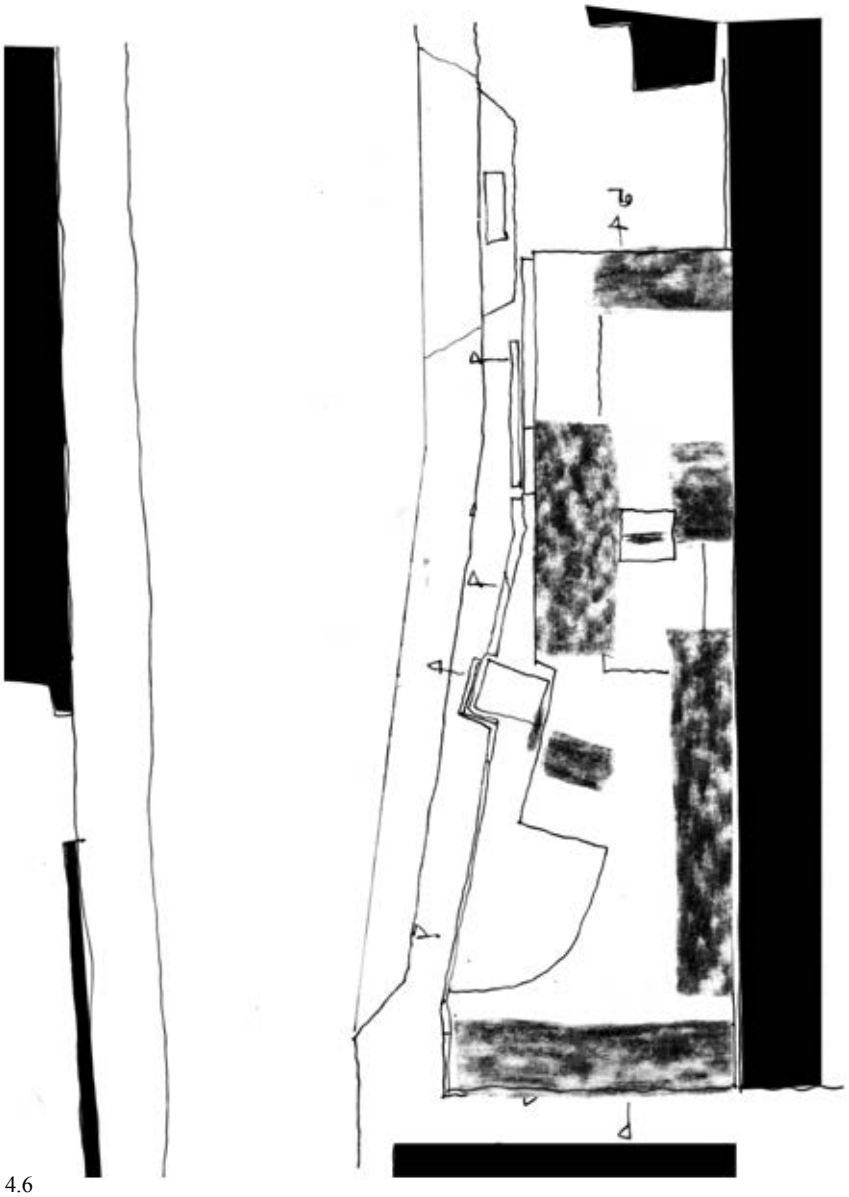


4.5 Bulding as a chunk of earth with voids

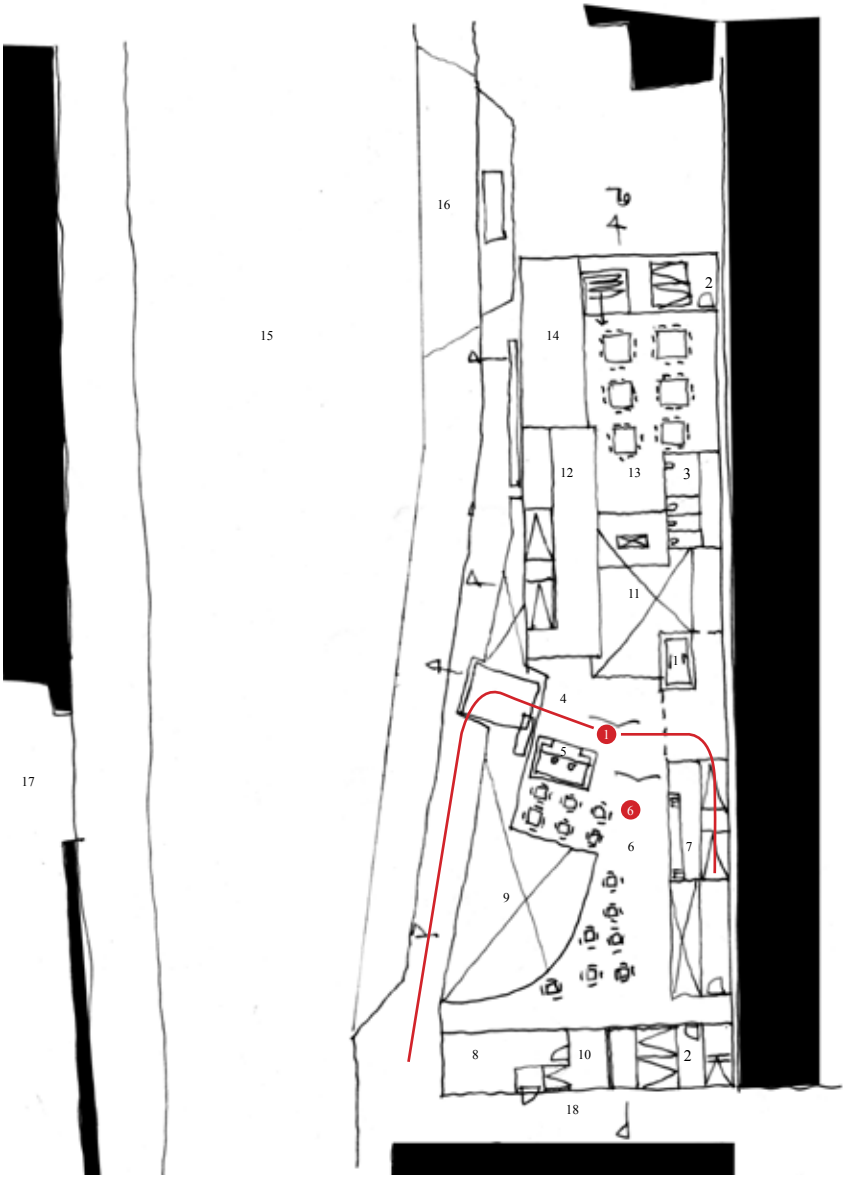
Arrival

When first seen, either from further along Buitenkant Street, or from the surrounding taller office and apartment buildings, the Platteklip Bath and Clay House seems to be an earthwork – part chunk of ground, part excavated cave and part steaming spring (refer to Figure 4.5) . The building, in fact, uses 'klompie' clay bricks and a system of concrete slabs, working in compression and balance, to become boulders that are stacked: connecting the earth with the water and sky. One observes a massive rectangular volume with voids carved from its exteriors, its roof and terraces covered with fynbos and a large curved bulblike wing that extends over the entrance (refer to the elevation in Figure 4.22). Later, one realizes that the wing, made of concrete like a piece of floor that escaped from the pressure of the boulders above, is a rain-catching device that harvests the water falling from the sky and lets it waterfall over another boulder into the pool below.

As one walks along the street, the sound of the gushing river below echoes in the excavated earth void next to the sidewalk. To enter the building one has to step onto a concrete bridge that spans the void that echoes. Three metres below the bridge lies a pool of still water, a contrast to the sound of the river. The entrance door is a boulder itself, a large brick wall that is pushed aside to expose a glass wall weather barrier: a slit in the larger boulder. Entering the brick-paved foyer, one is confronted with three boulders of varying size, and a view into the main void where the pool lies below (point 1 in the ground floor plan – Figure 4.6). From here one can hear the chatter of the café to the right, and from the left, smell the fragrant fynbos oils being distilled. From the same position, if one looks

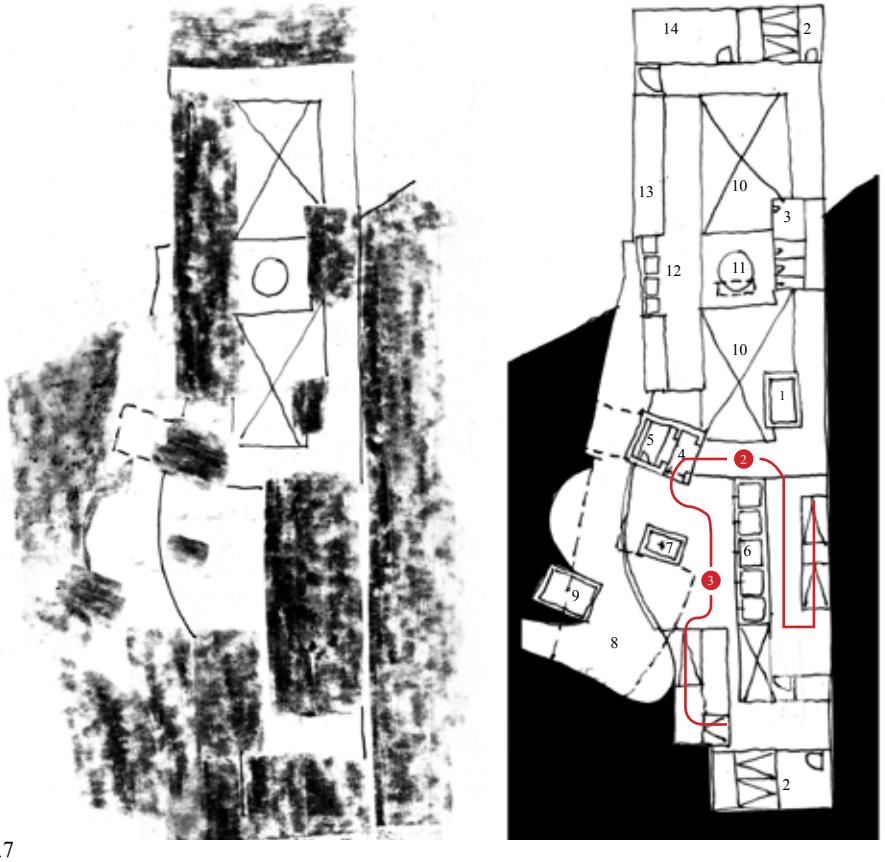


4.6



+0: Ground Level

1. Lift
2.Fire escape
3.Toilets
4.Entrance foyer
5.Reception
6.Cafe
7.Cafe counter
8.Kitchen
9.Void to pool below
10. Fire exit
11. Void to pool
12. Essential oils
13. Clay studio
14. Terrace
15. Buitenkant street
16. MyCiti bus stop
17. Rust en Vreugd
18. SIde Alley

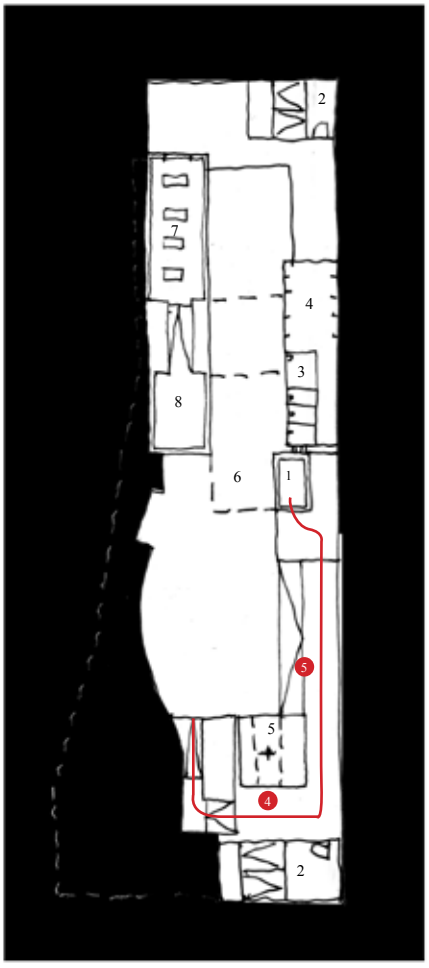


4.7

-1: Upper Level Pool

1. Lift
2.Fire escape
3.Toilets
4.Pool reception
5.Towel room
6.Change rooms
7.Water room
8.Purification pool
9. Pump room
10. Void to pool
11. Fire platform
12. Kilns
13. Clay store
14. Distillery store

through the void, over the furnace which burns on a level below, one can see the workshop of clay where children, parents and young adults experiment with clay. Moving below the level of the ground, to where the pools are, one follows the stair-well in front, towards the water seen from the road. The dark damp stairwell takes one around, back to the same void seen from the foyer, where one is now level with the furnace that burns across the void (point 2 in the Upper Pool level - Figure 4.7). The smell of warm earth fills the space and the air seems dry and hot. Should one wish to progress to the pool that lies at the bottom of this void, one moves through another boulder-entrance, where one can pay to go to the main pool buried below the ground. One is bathed in sunshine and the pool lies very still. Oils from cars, collected in the river float to the top and solids sink into the depths of the purification pool. It reflects its surrounds in the inky water. The sound of the river can be heard again, gushing into the inlet tank, where it goes before it trickles into this pool (point 3 in the Upper Pool Level – Figure 4.7). The changing rooms are timber boxes within a larger brick boulder that open up into this space, warmed by the western sunshine. Should it be summer and too hot, a metal shading curtain can be drawn that looks like a waterfall falling from the floor above, and which sways in the breeze. One can then once again enter the stairs in the adjourning boulder, next to the water, and curve around and down, following the sculpting of the river, to the lowest level beneath the earth. One arrives in a dark corridor where to the left sits a cubic boulder. Within the boulder is a manual water pump where one can collect fresh spring water from the river. The earth smells damp as if one is within the deepest part, below the river, and a tall void hovers



-2: Lower Level Pool

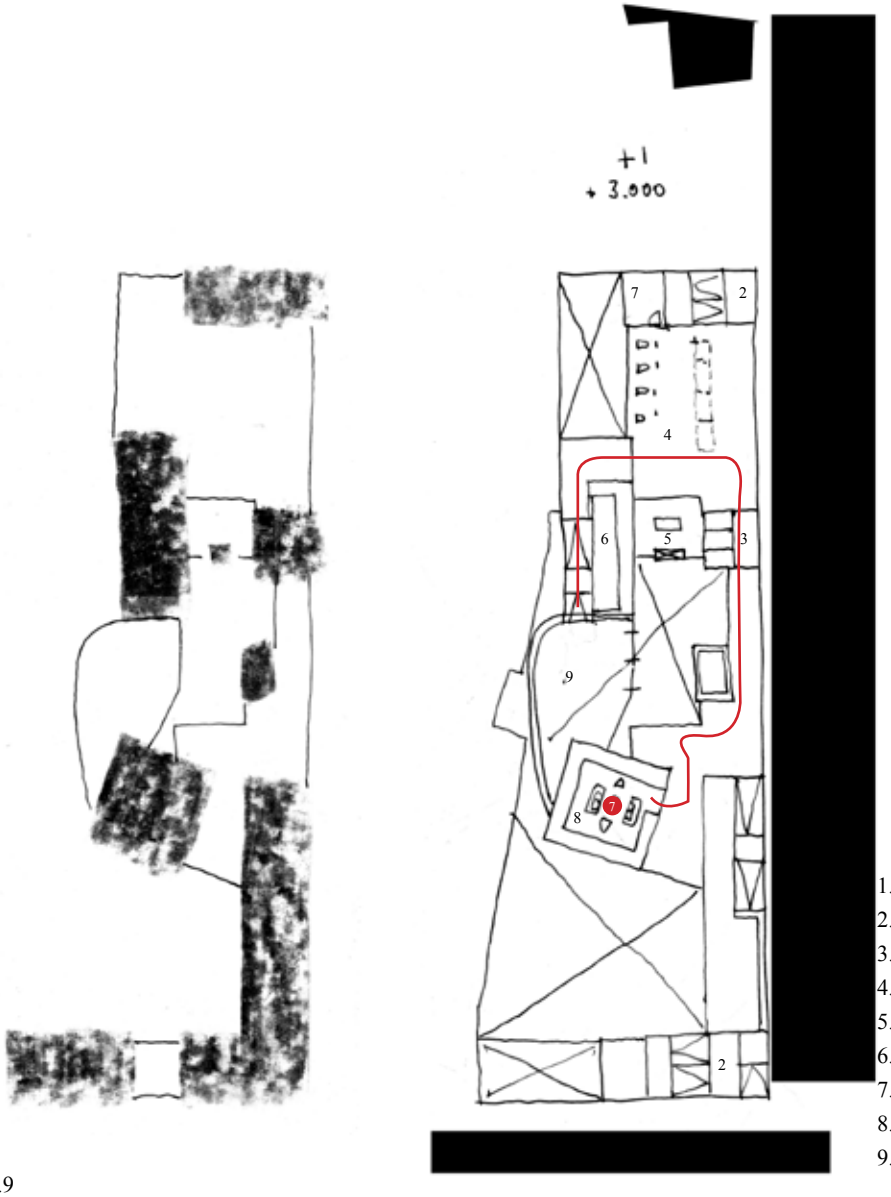
1. Lift
2.Fire Escape
3.Toilets
4.Drying platform
5.Water platform
6.Pool
7.Steam room
8.Hot pool

4.8

over the pump, bringing cool air down to the pool (point 4 in the Lower Pool level – Figure 4.8). Around the corner, the earth opens up to a large void where the main pool sits. Across the cool water, a shaft of sunlight slashes the dark void and sounds of the street fill the interior. Steam from the hot pool, across the water, rises slowly and moves towards the square of light at the far end of the void (point 5 in the Lower Pool Level – Figure 4.8). If one lies in the water under the square of light, one can look upwards and see the sky. It is through this void that the water from the bulb above the entrance falls in a waterfall when it rains.

Should one like a drink or snack after the swim one returns to the ground floor level, where the café would have been seen from the road. The café sits open to the road and the floor cuts away to the still pool below, as if the river once sculpted it during a flood. The open space is light and airy however, and the same curtain that shades the level below is repeated to shade the café from the west afternoon sunshine. Table Mountain can be glimpsed through a void on the South Western façade and Lions head, as well as the garden at Rust en Vreugd, can be viewed from this platform (point 6 in the Ground Floor – Figure 4.7).

The upper levels of the publicly-accessed spaces form a series of studios where clay is made or events hosted. They are boulders in themselves and are essentially open flexible spaces for rent. A large cubic boulder sits above the café and houses the small reading room. This double-volume space is cubic in nature and has 1,2m thick walls, forming seats and shelves of books (point 7 in the First Level – Figure 4.9). The way



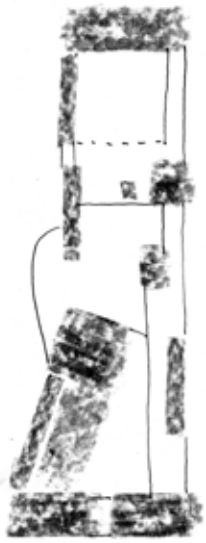
+1: First Level

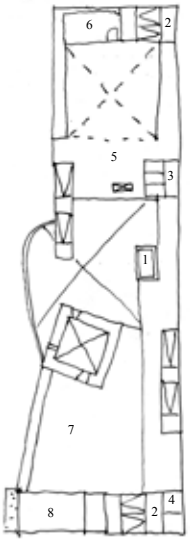
1. Lift
2.Fire escape
3.Toilets
4.Throwing studio
5.Invention studio
6.Drying room
7.Clay store
8.Library
9.Rain gutter

4.9

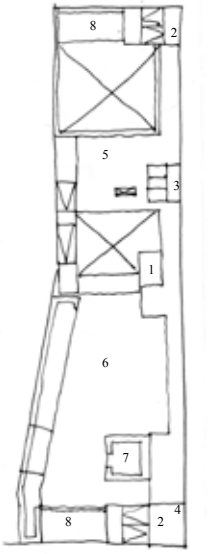
to get from one level to the next is always within the same two boulders and brings one back to the main central void, with the water below. Above these public levels are a series of living units. Each unit becomes a boulder in itself and terraces are cut as voids into the facades. All glass is set back so that from the road, all that is seen is clay brick: the mass of earth.

The sense of experiencing the constant juxtaposition of dark and light, solid and void, water and fire, air and earth, makes one aware of the sense of time, mass and balance: the gravitas of these spaces which were developed by investigating a series of thresholds where the elements meet. The arrival of cool river water and air along the roadside, the threshold of misted water and hot air, of air and fire as well as water and fire, where the earth meets the fire, and how light meets these elements, all form a set of spaces to be sculpted within the boulders. These are explained below, according to the threshold, the desired outcome and how it formed a physical manifestation of experience.





+2: Second Level



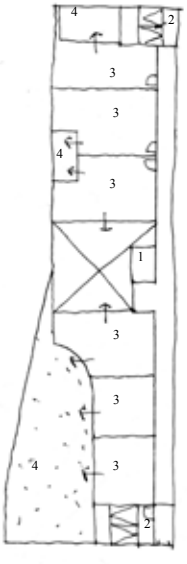
+3: Third Level

1. Lift
2.Fire escape
3.Toilets
4.Store
5.Studio 1
6.Office 1
7.Studio 2
8.Office 2

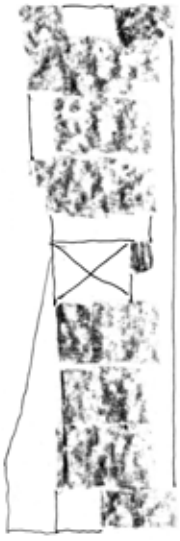
4.10

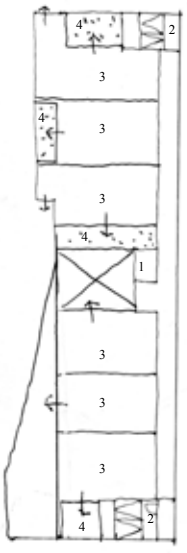
1. Lift
2.Fire escape
3.Toilets
4.Entrance foyer
5.Display room
6.Studio 3
7.Studio 3 store
8.Terrace

4.11



+4: Fourth Level





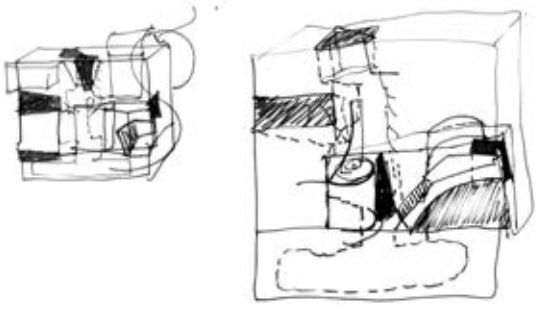
+5: Fifth Level

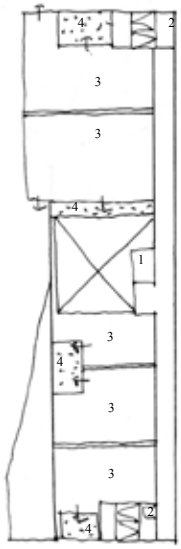
1. Lift
2.Fire escape
3.Living unit
4.Terrace

4.12

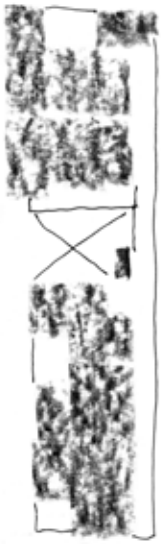
1. Lift
2.Fire escape
3.Living unit
4.Terrace

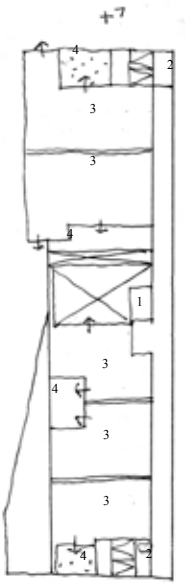
4.13





+6:Sixth Level





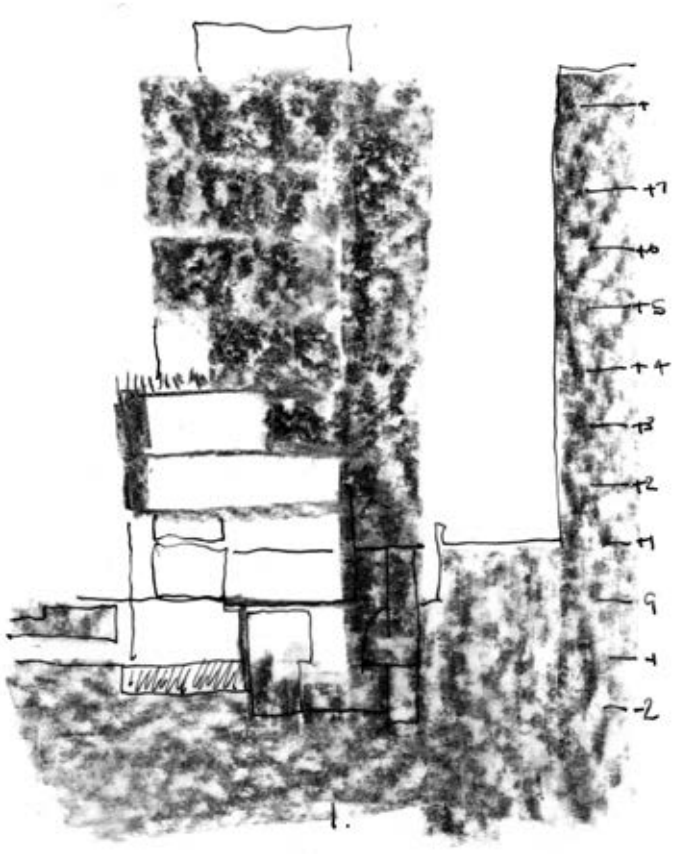
+7: Seventh Level

1. Lift
2.Fire escape
3.Living unit
4.Terrace

4.14

1. Lift
2.Fire escape
3.Living unit
4.Terrace

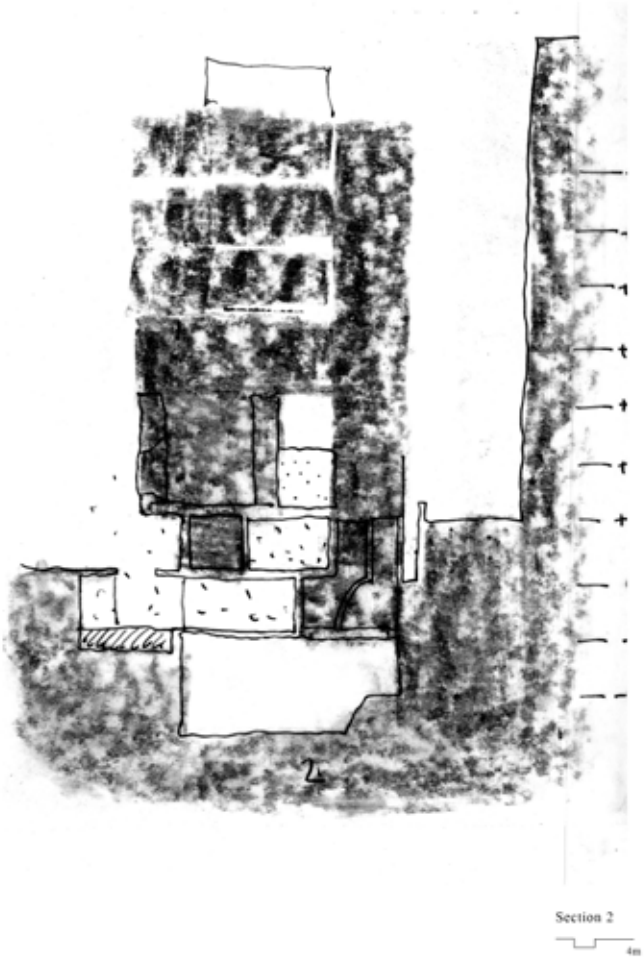
4.15



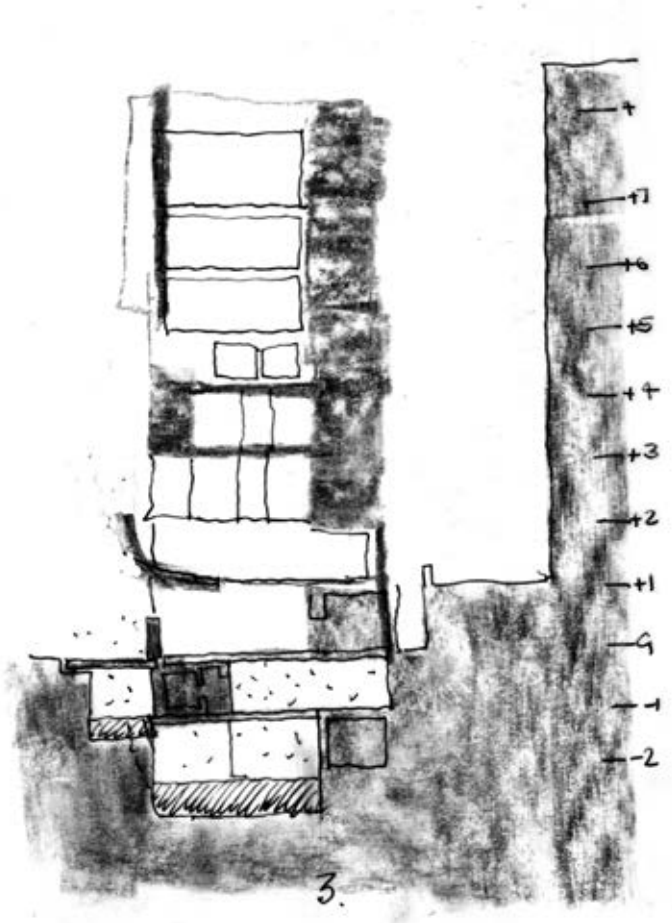
Section 1

4m

4.16



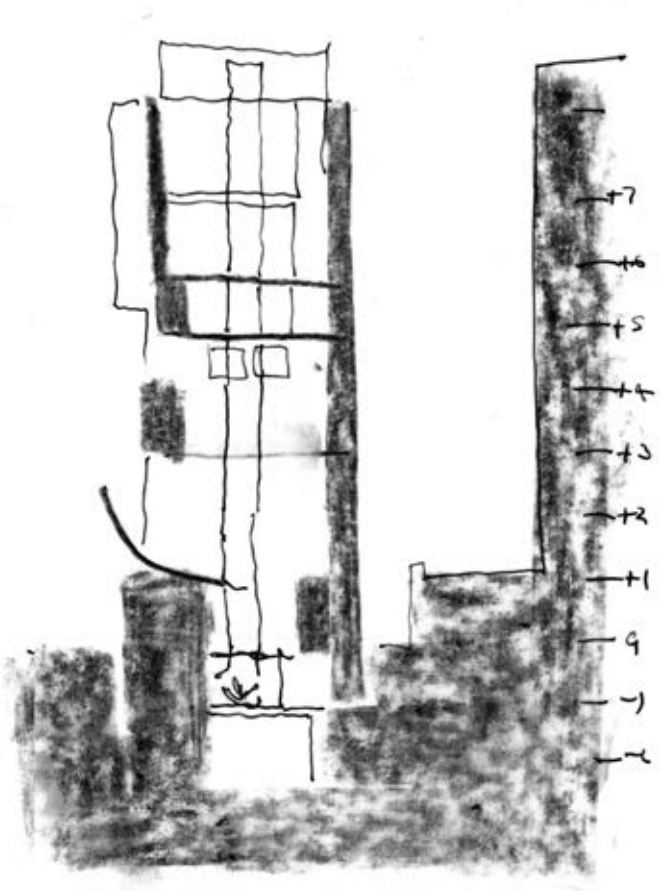
4.17



Section 3

4m

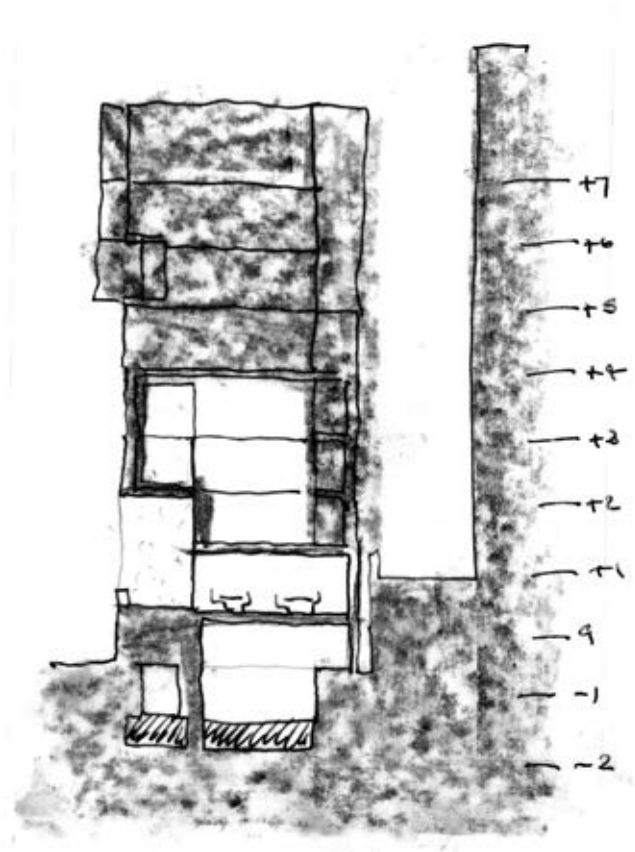
4.18



Section 4

4m

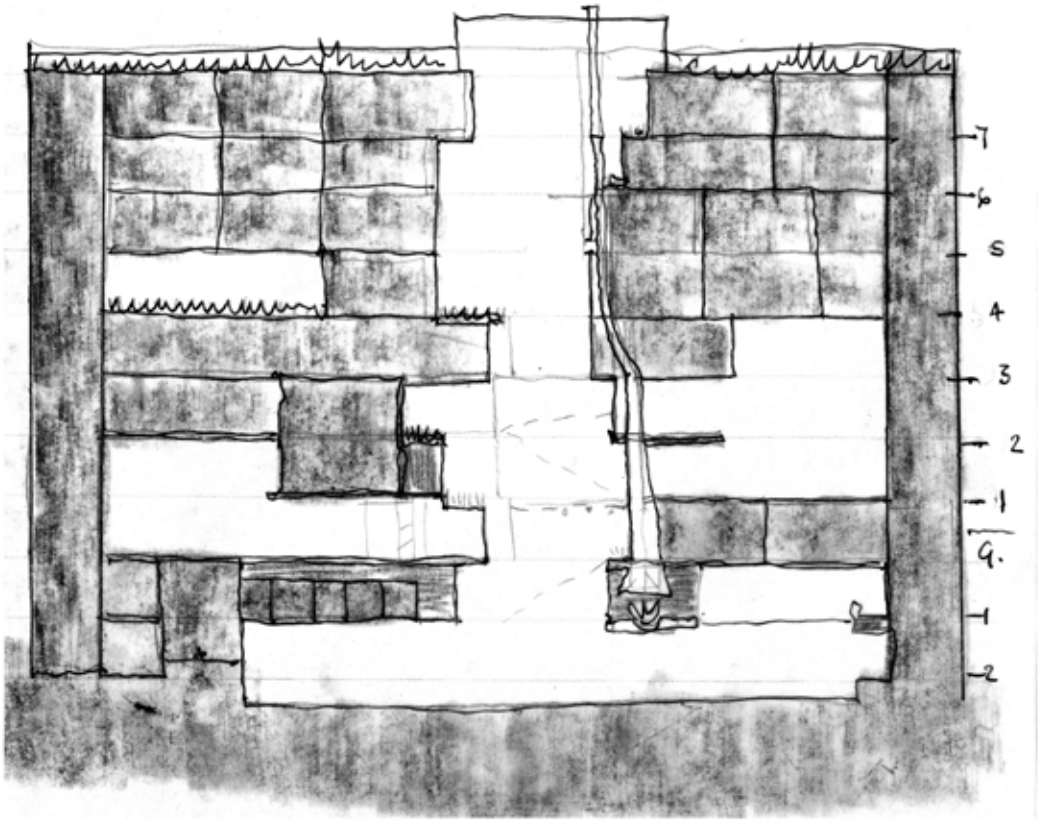
4.19



Section 5

4m

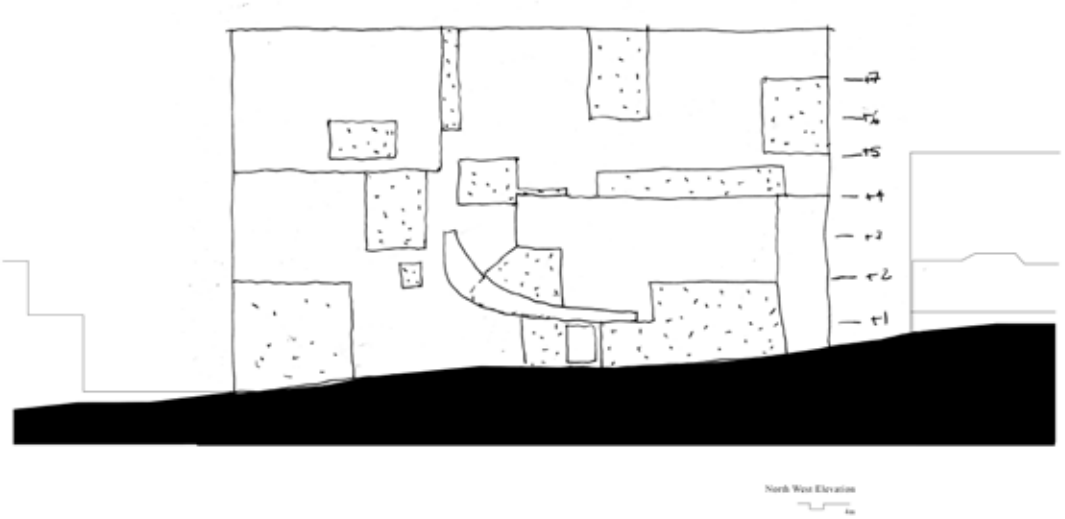
4.20



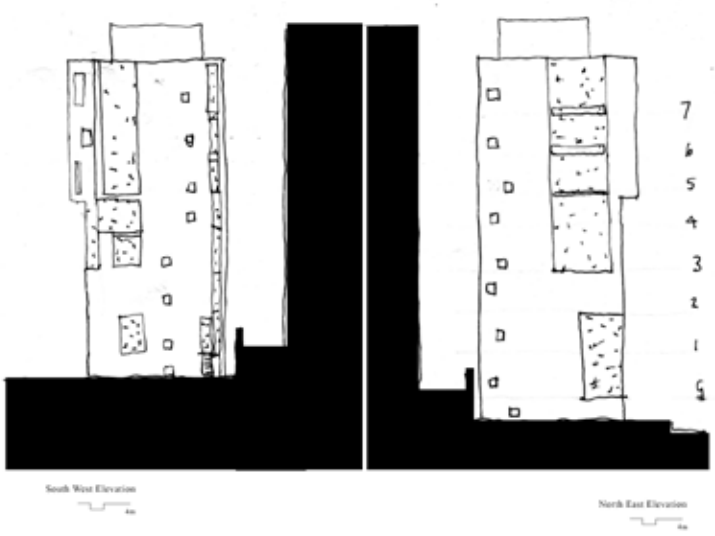
Section 7

4m

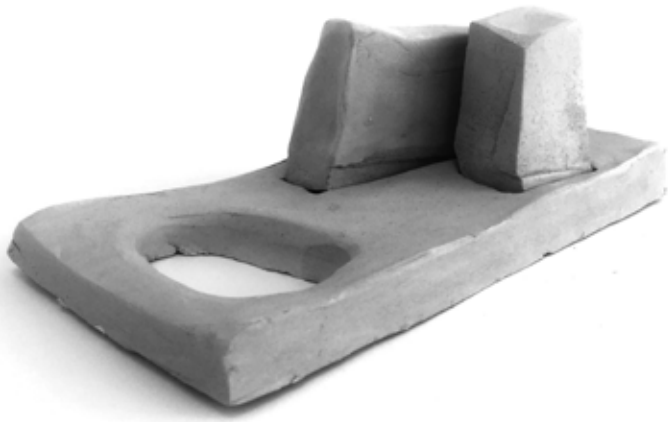
4.21



4.22 North West Elevation



4.23 South West and North East Elevations

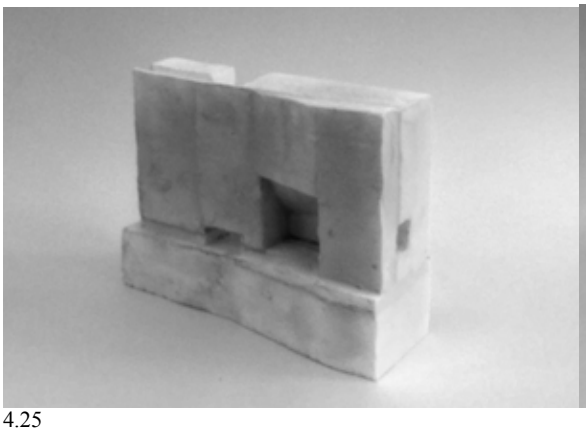


4.24 An early model of massing on site: chunks of earth and excavations

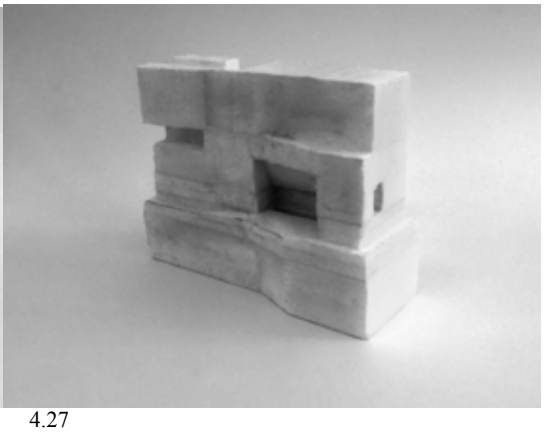
Matter

The structure is made out of blocks under compression. All vertical elements are clay brick, and a concrete slab spans these boulders. Due to the compression that the boulders undergo, a series of arches and vaults are used when making openings in the boulders, allowing one to follow the forces through the structure, across slabs and down, to the earth. Auguste Perret argues that; “a builder who hides any part of the building frame abandons the only permissible and, at the same time, the most beautiful embellishment of architecture.”[1] The gravity that is established by such a structure allows it to become a part of the earth, weathered by time and grounded in its presence.

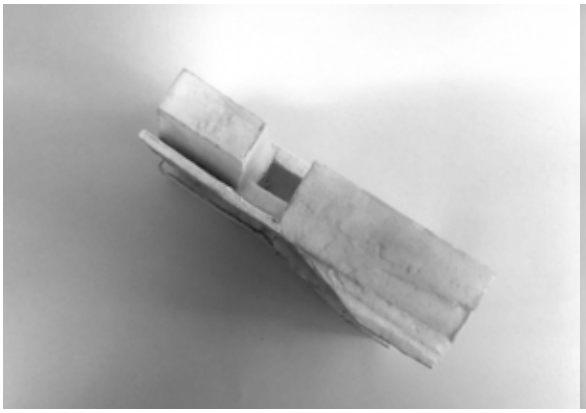
The models on the following page (Figures 00 - 00) were preliminary investigations into massing and making boulders, as well as the relationship between boulder and void.



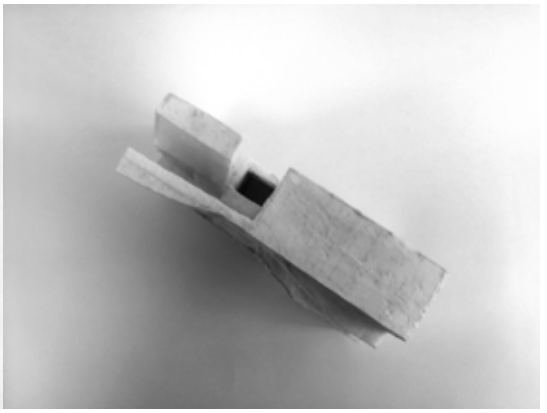
4.25



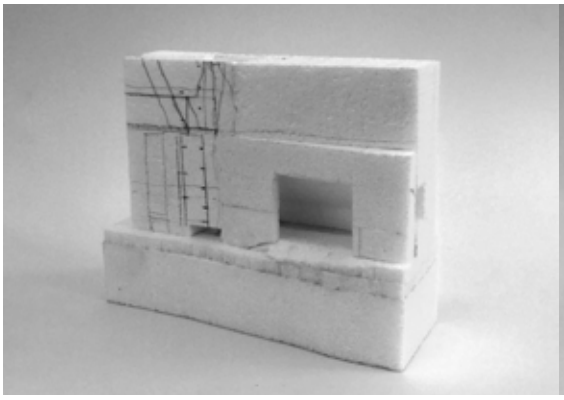
4.27



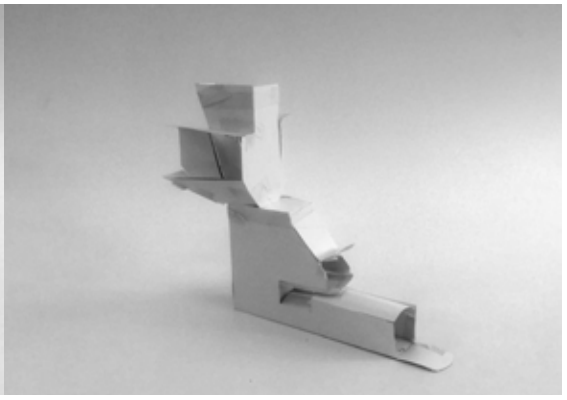
4.26



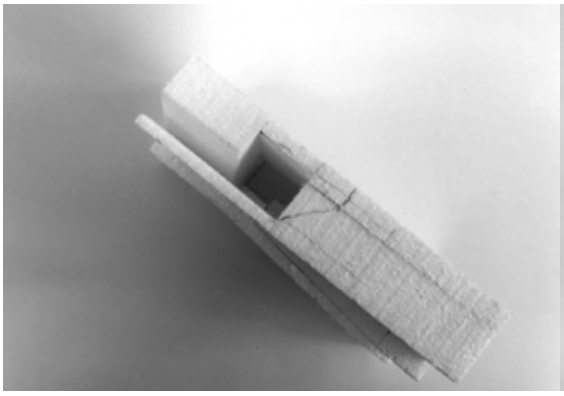
4.28



4.29

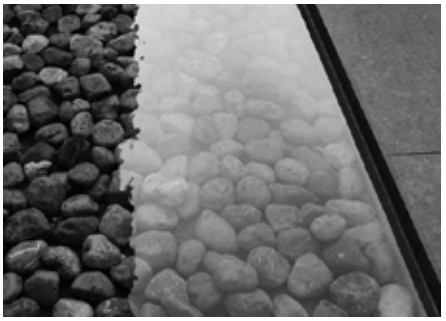


4.31

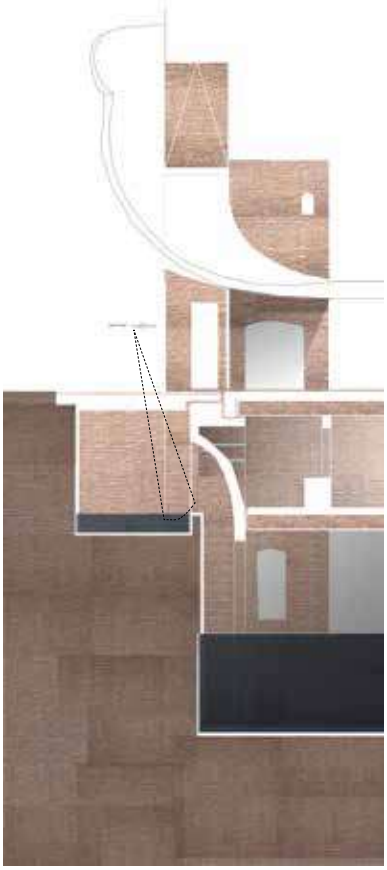


4.30

4.32

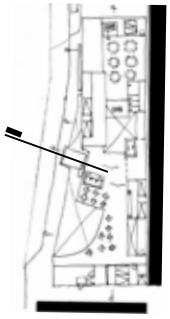


4.43 View from the bridge of still water



4.44 Threshold 1

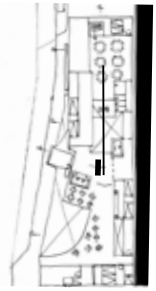
Elemental Thresholds



Cool still water meeting air is the threshold that one experiences as one enters the building over the bridge. The earth then meets the air in the moving aside of the boulder as front door, and the scraping of this action is echoed in the void below. Juhani Pallasmaa says “the contemporary city has lost its echo”[2] and so the sounds are present from the street. The tall slit then collapses as one enters the foyer to find a low lit, brickpaved cave. Figure 4.44 is a section through this first experience.

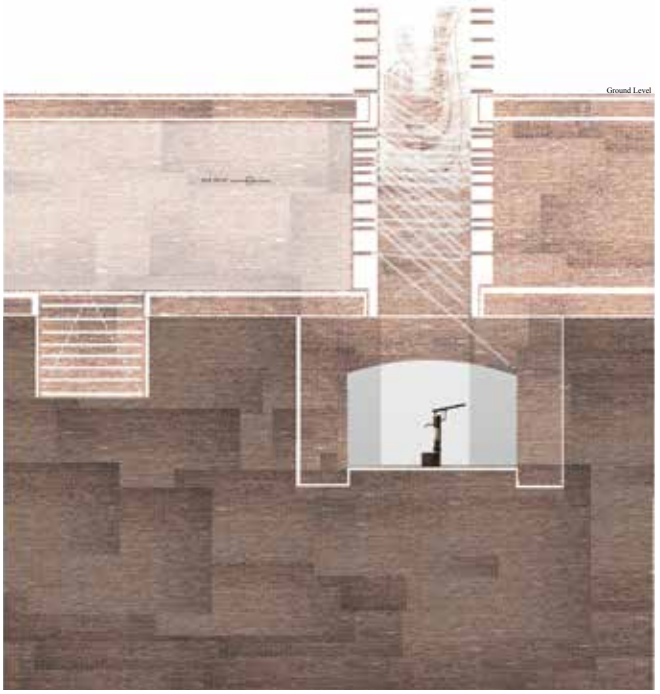
4.45 Petrichor

4.46 Threshold 2



4.47 Mirage

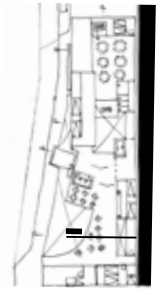
The second threshold is that of fire meeting earth and air. Figure 4.46 is a section through the fire pit that hovers over the main pool below. The smell of baked hot earth fills the foyer during summer and in winter, the waterfall spills over the fire pit, some rain hitting the top slab where the warm bricks smell like the rain that falls. 'Petrichor' is the term used to describe the smell of rain on dry earth. The word originates from the Greek work "*petra*" which means "stone" and the word "*ichor"* meaning "fluid that flows in the veins of the gods."[3] Figure 4.45 reminds one of this smell where warm earth meets rain.

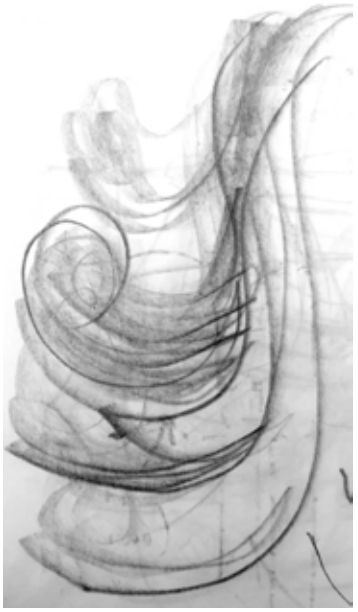


4.49 Threshold 3

4.50 Damp earth

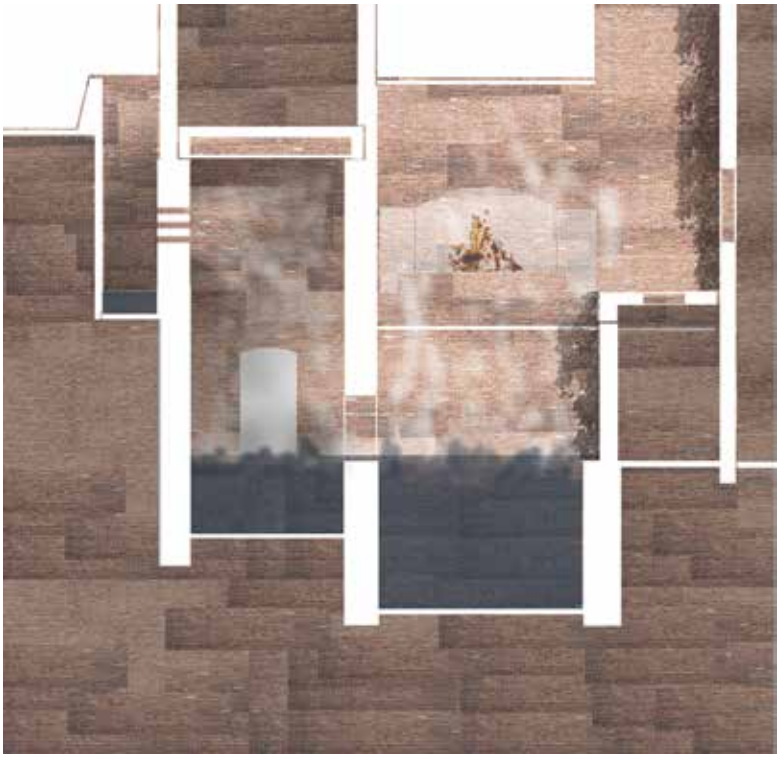
4.48 Mineral meets water



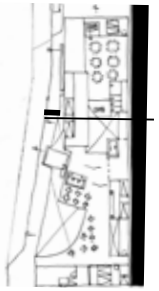


Mist the falls

Damp air meeting earth is the third threshold and is experienced in a series of places where the smaller void runs through the building, the void that catches the summer hot air and condenses it with misters. The condensed air then rains through the void, falling at the water pit on the lower pool level. The section in Figure 4.49 is through the water point on the lower level where the damp earth and rain is felt deep within the ground.



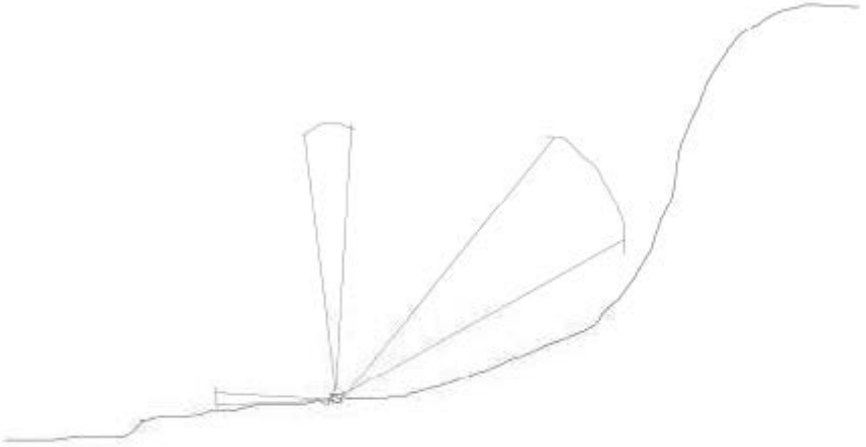
4.52 Threshold 4



4.51 Steam

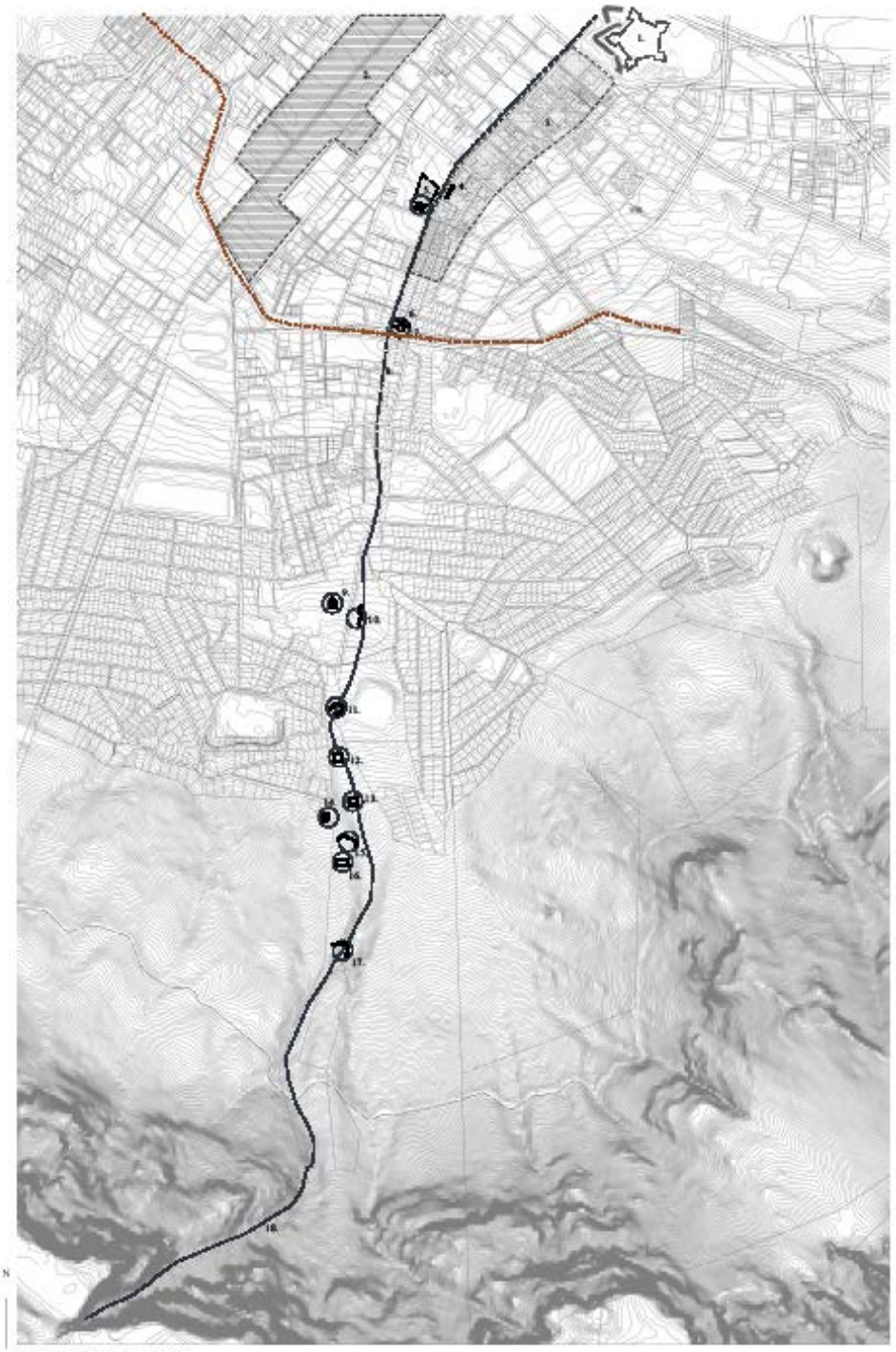
The fourth threshold is where fire meets water. The water from the purification pool is channeled in the slab under the fire, to be warmed where it then falls into the hot pool. The hot pool is accessed through the steam room; however, it lies adjacent to the cold pool. The steam rises up through the main void and mists the ferns and mosses that cling to the wall of the void. The light that falls down through the void highlights the steam in a glow of evaporated water. Figure 4.52 is a section through the hot pool, the cool pool and the void above.

Part Five: Final Review Drawings



Cape Town City Bowl
1:10 000

[redacted]



Mobility Flow Paradise 1:2000












1. CASTLE OF GOOD HOPE

2. COMPANY'S GARDENS

3. EDGE BUFFER ZONE

4. 68A BUITENKANT STREET
5. RUST EN VREUGD

6. FRESH WATER SPRING
7. CLAY LINE

8. BUITENKANT STREET TUNNEL

9. FIELD OF SPRINGS
10. PLATTEKLIP STREAM

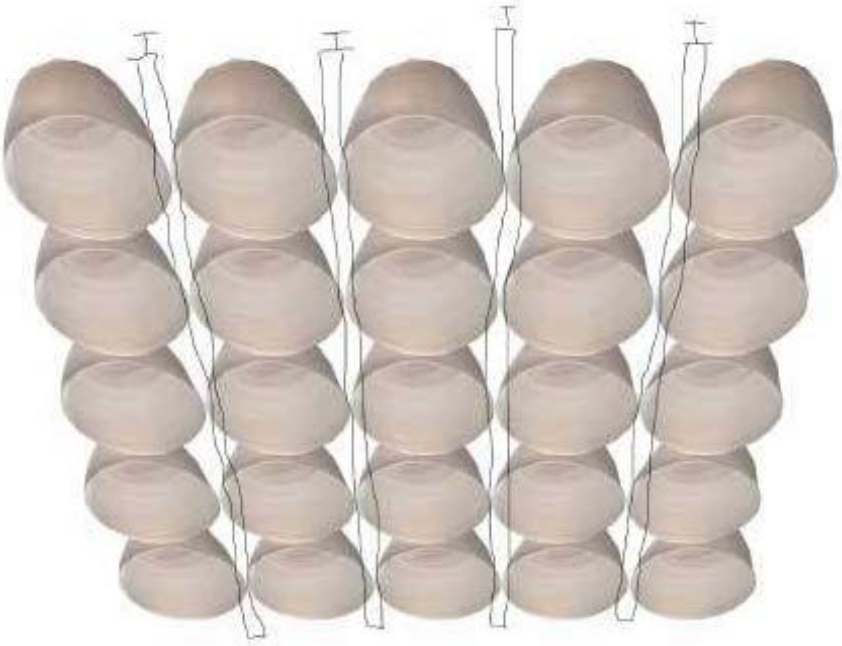
11. KASSWATER WASPLAAS

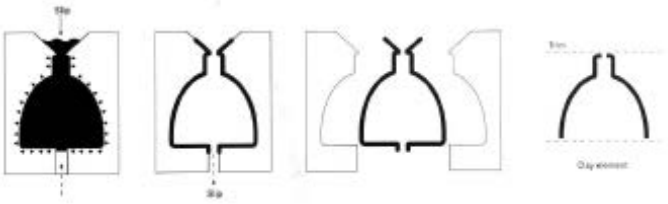
12. LOWER WASH HOUSE

13. UPPER WASH HOUSE
14. PLATTEKLIP MILL
15. SLOW SAND FILTER
16. KRAMAT OF SEYED ABDUL HAQ AL QUADERI

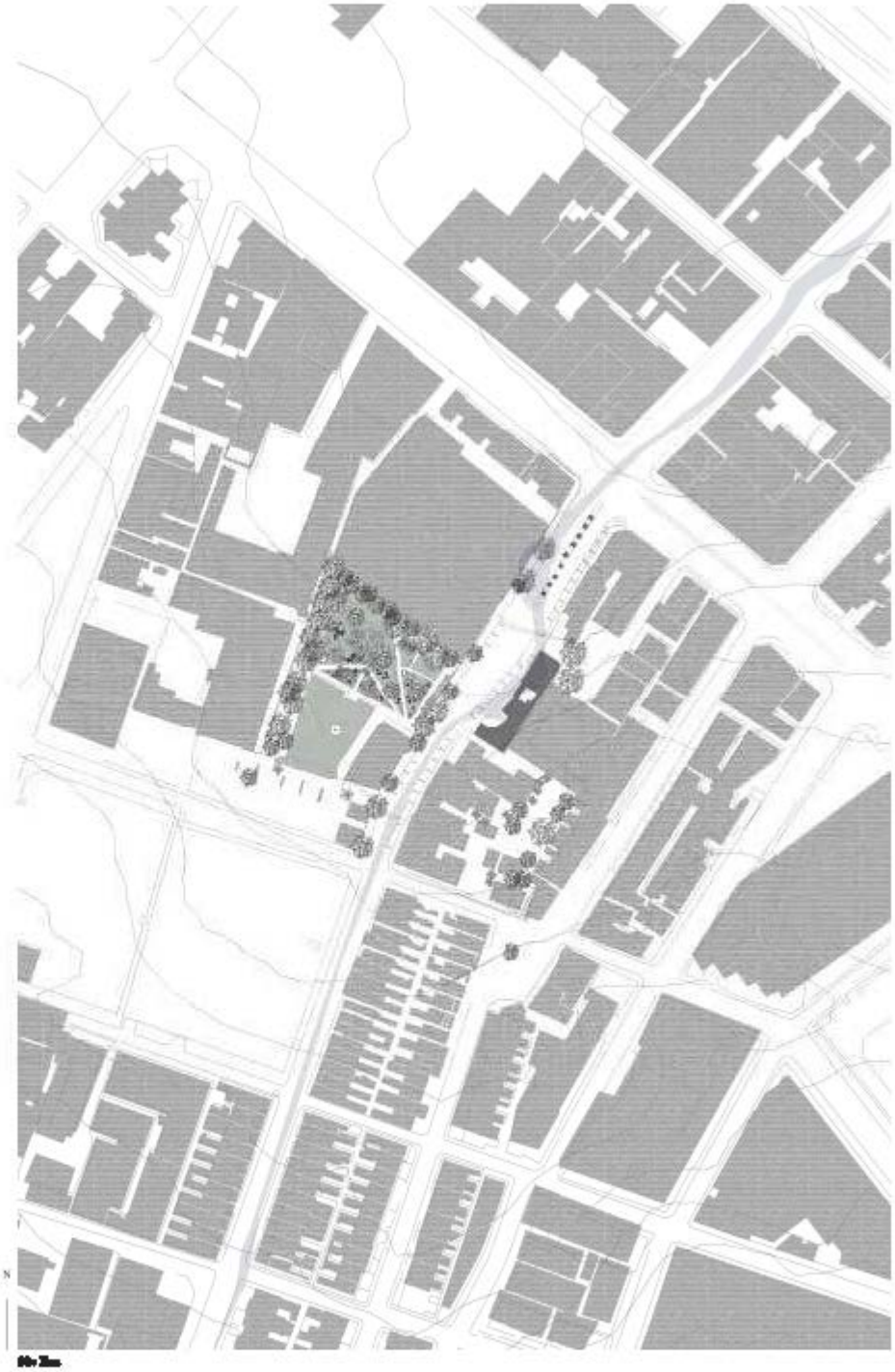
17. PLATTEKLIP WATERFALL

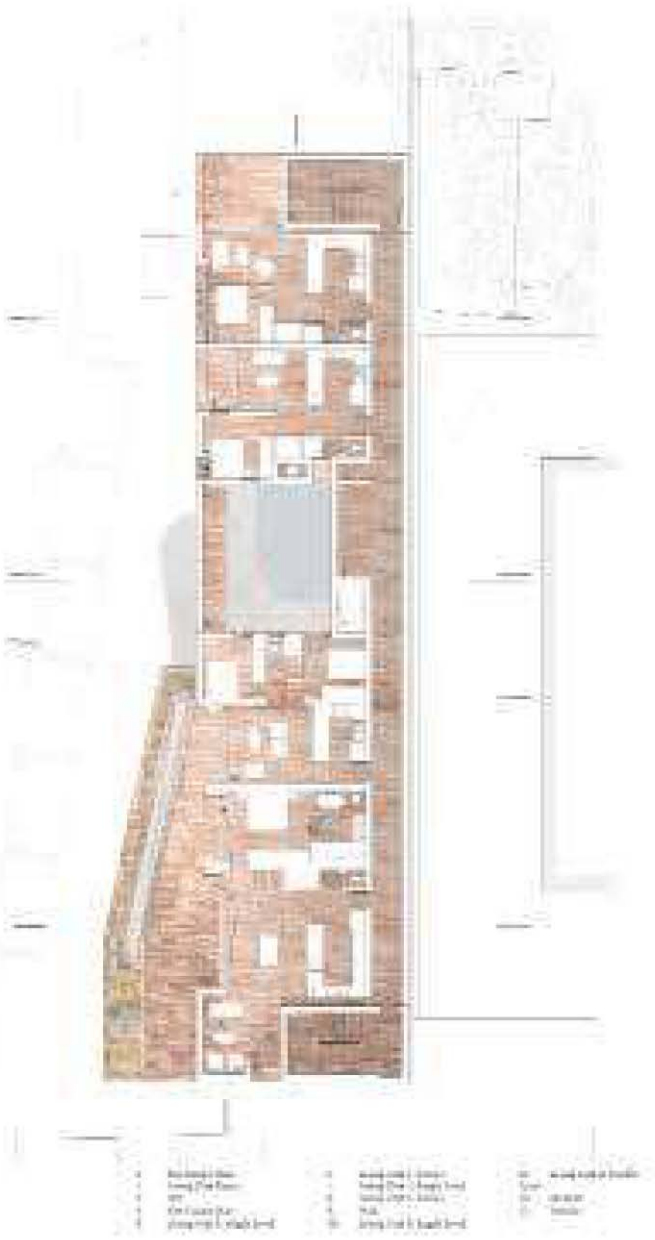
18. PLATTEKLIP GORGE

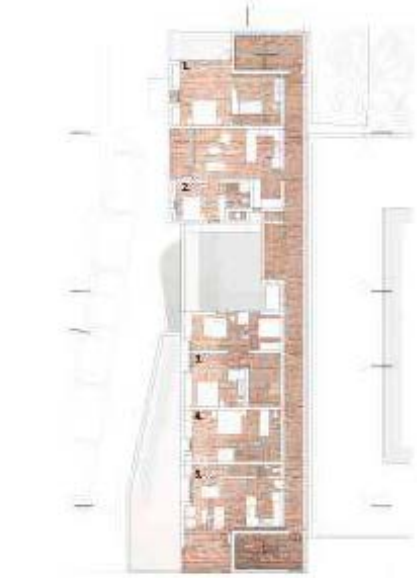




Collaging Atmosphere







+5

1:200

1.
2.
3.
4.
5.

+6

1:200

1.
2.
3.

+7

1.
2.
3.

Roof

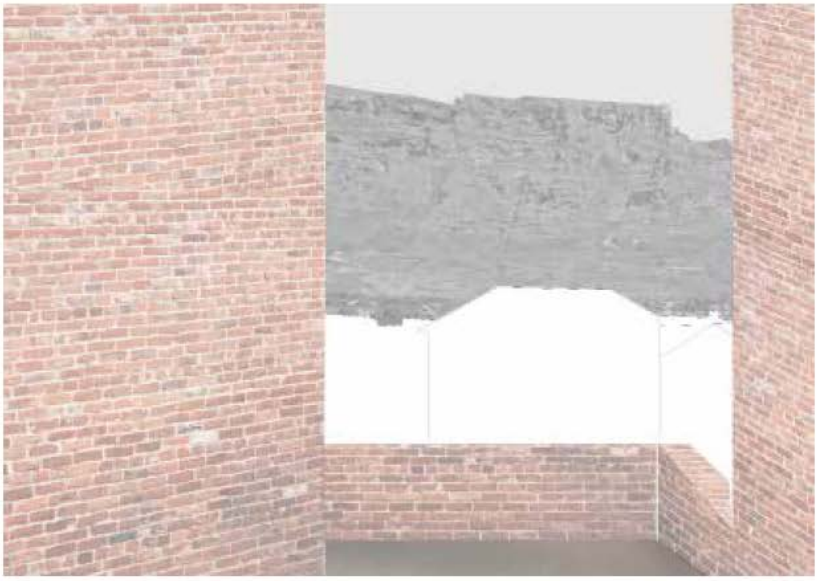
1.
2.
3.

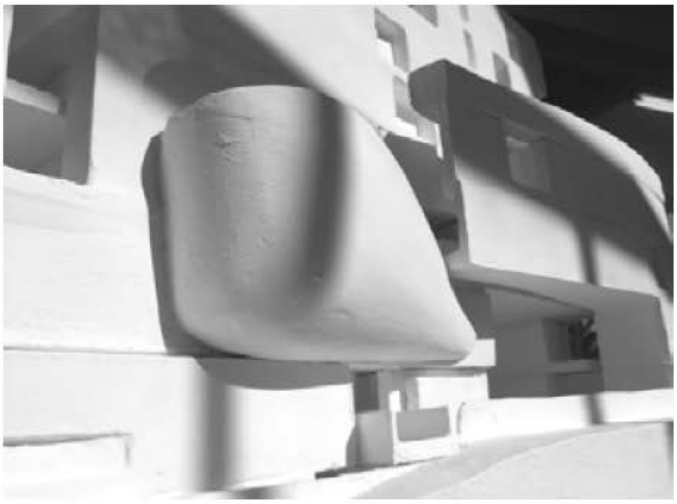
Section A-A
1:100

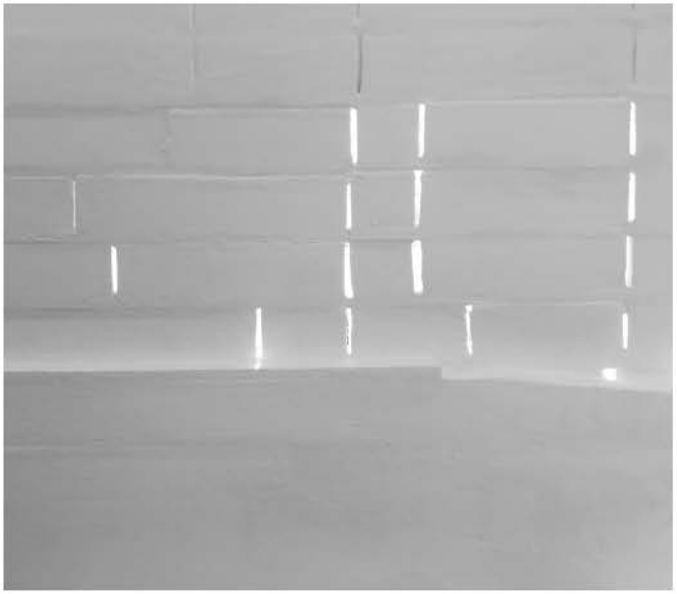
Section EE
1:100

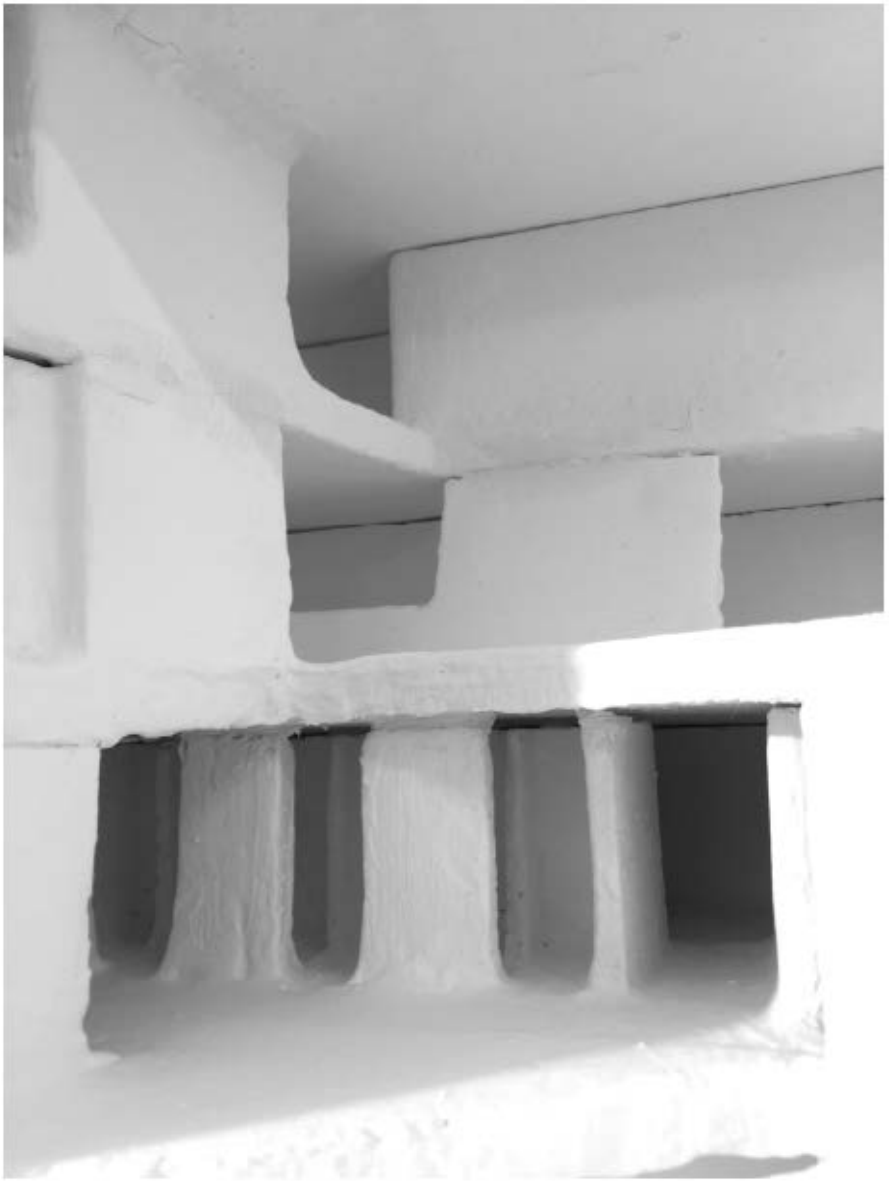
Sezione CC
1:100

North East Elevation
1:100









Conclusion

This dissertation began with an interest into how a sculpting of landscape creates a timeless architecture embedded within site.

The research started with observations of cities becoming placeless and not founded in locus. The proposal of architecture as a sculpting of landscape was provided as an alternative to the placeless city and investigations were done into how one may achieve such an architecture.

An urban scale site was chosen; the Platteklip river in Cape Town, from which the metaphorical and physical tales were garnered and collected in a well of knowledge. The climatic, geographic, historic and current tales formed the parameters from which one could design.

The dissertation then became specific in the selection of a site on which these theories were to be practiced. Number 63a Buitenkant Street was chosen as a parking lot, a site along the river, within the city, to be a sculpting of landscape. The program simply was a collection of the narratives of the river and so a place to make clay vessels, a place to swim in a pool, a place to eat, drink and work and a place to live. The manifestation of every-day life, the mundane, applied in a manner which was so intrinsically linked to place.

End Notes

Epigraph

1 Jackson, J.b quoted from Corner, J. (1999)

Introduction

1 Fellingham, K. (2017)

Part One: Architecture as Landscape

1,2 Corner, J. (1999), pg. 37

3 Anon. (2016) from United Nations Statistics

4 Quoted here from Heymann, D. (2011)., on Loos, A. (1985)

5 Heymann, D. (2011)

6 Descombes, G. in Corner, J. (1999). pg 79

7 Vitruvius, P. (2003)

8 Bachelard, G in McCartner, R and Pallasmaa, J (2012)

9 Corner, J. (1999), pg. 12

10 Corner, J. (1999), pg. 39

11 As per the theory on place by Norberg-Schulz, C. (1991)

12,13,14 Loos, A. (1985)

15,16 Corner, J. (1999). pg 79

17,18 Descombes, G. in Corner, J. (1999). pg 82

19,20,24 Holl, S; Pallasmaa, J; Perez-Gomes, A. (2006). p. 46

21 Holl, S; Pallasmaa, J; Perez-Gomes, A. (2006). p. 29

22,25 Kahn, L. quoted in McCarter, R & Pallasmaa, J.(2012) pg. 6

23 Brancusi, C. in McCarter, R & Pallasmaa, J. (2012) pg. 81

Part Two: The forgotten river, the reading of a site

1-3;5	Gosling, M. (2013). np
4, 6-20	Von Zeil, C. (2004). np
21	Geddes, P. (1923) p.289
22	Compton, J. (2004) p. 21
23	Compton, J. (2004) p. 29
24	Compton, J. (2004) p. 28
25	Compton, J. (2004) p. 37
26-31	Compton, J. (2017)
32	Bechthold, M; Kane, A & King, N. (2015) p.12-62
33	Glenday, K. (2017)
34	Heidegger, M in Karandinou, A. (1967)
35	Deutschlander G. (2017)
36	Van der Walt, A. (2017)
37-40	Campbell, G.A. (2014). p. 26
41	Chadbon, D. (2017)
42-46	Campbell, G.A. (2014). p. 29

Part Four: The building as boulder and void

1	McCartner, R and Pallasmaa, J (2012). p. 117
2	Holl, S; Pallasmaa, J; Perez-Gomes, A. (2006). P.30
3	Murray, J.A.H., Bradley, H., Craige, W.A. and et.al (1961)

Reference List

Anon. (2016). *World Population Prospects*. [online] Available at: World Population Prospects - Population Division - United Nations" [Accessed 03/07/2017]

Bechthold, M; Kane, A & King, N. (2015). *Ceramic Material Systems*. Berlin, Basel: Birkhäuser.

Campbell, G.A. (2014). *Reconstructing Township Primary Schools_A Means to Social and Environmental Sustainability. MSc Sustainable Environmental Design.* Architectural Association School of Architecture.

Chadbon, D. (2017). *The Fynbos Guy, Cape Climate*. [online] Available at: http://thefynbosguy.com/cape-mountain-environment/cape-climate/. [Accessed 15/07/2017]

Compton, J. (2004). *The Rocks and Mountains of Cape Town*. Cape Town, South Africa: Double Storey Books

Compton, J. (2017). Talking on Clays [Interview]

Corner, J. (1999). *Recovering Landscape, Essays in Contemporary Landscape Architecture.* New York, USA: Princeton Architectural Press

Deutschländer, G. (2017). Talking on Medicinal Fynbos [Interview]

Fellingham, K. (2017). Talking on Research [Interview]

Geddes, P. (1923). *The Valley Section from Hills to Sea.* New York, USA: anon

Glenday, K. (2017). Talking on Ceramics and Slip Casting [Interview]

Gosling, M. (2013). The Cape Times, *Reclaim Camissa, The Struggle to Save our Water Heritage.* [online] Available at: https://camissapeople.wordpress.com/2013/06/16/reclaim-camissa-the-struggle-to-save-our-water-heritage-

beware-of-the-greedy-tjommie-brigade/ [Accessed 03/07/2017]

Heidegger, M in Karandinou, A. (1967) No Matter: Theories and practices of the ephemeral in architecture. United Kingdom: Routledge.

Heymann, D. (2011). *A Mound in the Wood*, Places Journal. [online] Available at: https://placesjournal.org/article/a-mound-in-the-wood/#0 [Accessed 10/05/2017]

Holl, S; Pallasmaa, J; Perez-Gomes, A. (2006). *Questions of Perceptions: Phenomenology of Architecture*. Tokyo, Japan: A+U Publishing Co., Ltd

Loos, A. (1985). *The Architecture of Adolf Loos*. London, United Kingdom: Arts Council of Great Britain and the Authors

McCarter, R and Pallasmaa, J. (2012). *Understanding Architecture*. London, United Kingdon: Phaidon Press Limited

Murray, J.A.H., Bradley, H., Craige, W.A. and Onions, C.T. (1961). *The Oxford English Dictionary*. Oxford, United Kingdom: Clarendon Press

Norberg-Schulz, C. (1991). Genius Loci: Towards Phenomenology of Architecture. New York: Rizzoli

Van der Walt, A. (2017). Talking on Distilling Essential Oils [Interview]

Vitruvius, P. (2003) Ten books on architecture. Rome: Edizione dell'Elefante

Von Zeil, C. (2004). *Reclaim Camissa*. [online] Available at: https://www.facebook.com/RECLAIMCAMISSA/ [Accessed 03/07/2017]

List of Figures

Part One: Architecture as sculpting landscape

1.1 Heymann, D. (2011). *A Mound in the Wood,* Places Journal. [online] Available at: https://placesjournal.org/article/a-mound-in-the-wood/#0 [Accessed 10/05/2017]

1.5 McCarter, R and Pallasmaa, J. (2012). *Understanding Architecture*. London, United Kingdon: Phaidon Press Limited

Part Two: The forgotten river, the reading of a site

2.3 Von Zeil, C. (2004). *Reclaim Camissa*. [online] Available at: https://www.facebook.com/RECLAIMCAMISSA/ [Accessed 03/07/2017]

2.5 - 2.13 Von Zeil, C. (2004). *Reclaim Camissa*. [online] Available at: https://www.facebook.com/RECLAIMCAMISSA/ [Accessed 03/07/2017]

2.14 Geddes, P. (1923). *The Valley Section from Hills to Sea*. New York, USA: anon

2.16 & 2.17 Compton, J. (2004). *The Rocks and Mountains of Cape Town*. Cape Town, South Africa: Double Storey Books

2.20, 2.21 & 2.34 Compton, J. (2004). *The Rocks and Mountains of Cape Town*. Cape Town, South Africa: Double Storey Books

2.22 Bechthold, M; Kane, A & King, N. (2015). *Ceramic Material Systems*. Berlin, Basel: Birkhäuser.

2.23 Glenday, K. (2017). Talking on Ceramics and Slip Casting [Interview]

2..39 https://i.pinimg.com/originals/95/03/32/950332e1f3c9118f5584f36b0f0a2f8e.jpg

Part Three: Becoming specific and collecting program

3.2 Google Earth

Part Four: The building as boulder and void

4.1 http://c8.alamy.com/comp/FX6KBP/eroded-land-with-canals-at-industrial-waste-area-and-industrial-water-FX6KBP.jpg

4.43 http://uupload.ir/files/1cen_09062749695778080464.jpg

4.45 https://www.archdaily.com/798179/bijoy-jain-architecture-is-not-about-an-image-it-is-about-sensibility/5810ac0de58ecefd670001c2-bijoy-jain-architecture-is-not-about-an-image-it-is-about-sensibility-image

4.47 https://thumbs.dreamstime.com/z/mirage-sahara-desert-tunisia-place-popular-where-you-can-see-fata-morgana-hills-distance-not-real-49585573.jpg

4.48 & 4.51 Zumthor, P. (2014). *Peter Zumthor 1985-2013.* Zurich, Switzerland: Verlang Scheidegger and Spiess

4.50 https://www.dreamstime.com/photos-images/mixture-sand-clay-gravel.html

Bibliography

Anon. (2010). *Reflection, Refraction, Diffraction*. [online] Available at: http://www.physicsclassroom.com/class/sound/Lesson-3/Reflection,-Refraction,-and-Diffraction [Accessed 03/07/2017]

Anon. (2016). *World Population Prospects*. [online] Available at: World Population Prospects - Population Division - United Nations" [Accessed 03/07/2017]

Anon. (2017) Clay Brick Production Survey. Johannesburg: Swiss Contact pg. 25

Bechthold, M; Kane, A & King, N. (2015). *Ceramic Material Systems*. Berlin, Basel: Birkhäuser.

Campbell, G.A. (2014). *Reconstructing Township Primary Schools_A Means to Social and Environmental Sustainability.* MSc Sustainable Environmental Design. Architectural Association School of Architecture.

Chadbon, D. (2017). *The Fynbos Guy, Cape Climate. [*online] Available at: http://thefynbosguy.com/cape-mountain-environment/cape-climate/. [Accessed 15/07/2017]

Compton, J. (2004). *The Rocks and Mountains of Cape Town*. Cape Town, South Africa: Double Storey Books

Compton, J. (2017). Talking on Clays [Interview]

Corner, J. (1999). R*ecovering Landscape, Essays in Contemporary Landscape Architecture.* New York, USA: Princeton Architectural Press

Deutschländer, G. (2017). Talking on Medicinal Fynbos [Interview]

Fellingham, K. (2017). Talking on Research [Interview]

Geddes, P. (1923). *The Valley Section from Hills to Sea*. New York, USA: anon

Glenday, K. (2017). Talking on Ceramics and Slip Casting [Interview]

Gosling, M. (2013). *The Cape Times, Reclaim Camissa*, The Struggle to Save our Water Heritage. [online] Available at: https://camissapeople.wordpress.com/2013/06/16/reclaim-camissa-the-struggle-to-save-our-water-heritage-beware-of-the-greedy-tjommie-brigade/ [Accessed 03/07/2017]

Heidegger, M in Karandinou, A. (1967) No Matter: Theories and practices of the ephemeral in architecture. United Kingdom: Routledge.

Heymann, D. (2011). *A Mound in the Wood,* Places Journal. [online] Available at: https://placesjournal.org/article/a-mound-in-the-wood/#0 [Accessed 10/05/2017]

Holl, S; Pallasmaa, J; Perez-Gomes, A. (2006). *Questions of Perceptions: Phenomenology of Architecture.* Tokyo, Japan: A+U Publishing Co., Ltd

Loos, A. (1985). *The Architecture of Adolf Loos*. London, United Kingdom: Arts Council of Great Britain and the Authors

McCarter, R and Pallasmaa, J. (2012). *Understanding Architecture*. London, United Kingdon: Phaidon Press Limited

Murray, J.A.H., Bradley, H., Craige, W.A. and Onions, C.T. (1961). *The Oxford English Dictionary*. Oxford, United Kingdom: Clarendon Press

Norberg-Schulz, C. (1991). Genius Loci: Towards Phenomenology of Architecture. New York: Rizzoli

Thomas, R. (1996). *Environmental Design, An Introduction for Architects and Engineers.* London, United Kingdom: E & FN SPON.

Unwin, S. (2000).*An Architecture Notebook.* London: Routledge, p. 20

Van der Walt, A. (2017). Talking on Distilling Essential Oils [Interview]

Vitruvius, P. (2003) Ten books on architecture. Rome: Edizione dell'Elefante

Von Zeil, C. (2004). *Reclaim Camissa*. [online] Available at: https://www.facebook.com/RECLAIMCAMISSA/ [Accessed 03/07/2017]

Zumthor, P. (1999). *Thinking Architecture.* Basel, Switzerland: Birkhauser

Zumthor, P. (2006). *Atmospheres. Basel*, Switzerland: Birkhauser

Zumthor, P. (2014). *Peter Zumthor 1985-2013.* Zurich, Switzerland: Verlang Scheidegger and Spiess

Plagiarism Declaration

1. I know that plagiarism is wrong. Plagiarism is to use another's work and pretend that it is one's own.

2. I have used the Chicago convention for citation and referencing. Each contribution to, and quotation in this report from the work(s) of other people has been attributed, and has been cited and referenced.

3. This report is my own work.

4. I have not allowed, and will not allow, anyone to copy my work with the intention of passing it off as his or her own work.

5. I acknowledge that copying someone elses report is wrong, and declare that this is my own work.

Name: Katherine Grace Hall

Student Number: HLLKAT016

Signature: 

Date: 10/12/2018

Ethics Clearance

Application for Approval of Ethics in Research (EiR) Projects
Faculty of Engineering and the Built Environment, University of Cape Town

APPLICATION FORM

Please Note:
Any person planning to undertake research in the Faculty of Engineering and the Built Environment (EBE) at the University of Cape Town is required to complete this form before collecting or analysing data.The objective of submitting this application prior to embarking on research is to ensure that the highest ethical standards in research, conducted under the auspices of the EBE Faculty, are met. Please ensure that you have read, and understood the **EBE Ethics in Research Handbook**(available from the UCT EBE, Research Ethics website) prior to completing this application form: http://www.ebe.uct.ac.za/usr/ebe/research/ethics.pdf

APPLICANT'S DETAILS

Name of principal researcher/ student or external applicant		Katherine Grace Hall
Department		Architecture, Planning and Geomatics
Preferred email address of applicant		kategracehall@gmail.com
If a Student:	Your Degree: e.g., MSc, PhD, etc.	Professional Masters of Architecture
	Name of Supervisor (if supervised)	N c Coetzee
If this is a research contract, indicate the source of funding/sponsorship		
Project Title		The Absent Silence: a lost architectural language

I hereby undertake to carry out my research in such a way that:

- there is no apparent legal objection to the nature or the method of research; and
- the research will not compromise staff or students or the other responsibilities of the University;
- the stated objective will be achieved and the findings will have a high degree of validity.
- limitations and alternative interpretations will be considered;
- the findings could be subject to peer review and publicly available; and
- I will comply with the conventions of copyright and avoid any practice that would constitute plagiarism.

SIGNED BY	Full name	Signature	Date
Principal Researcher/ Student/External applicant	Katherine Grace Hall	Signed by candidate	03 Apr 2017

APPLICATION APPROVED BY	Full name	Signature	Date
Supervisor (where applicable)	Nc Coetzee	Signed by candidate	03 Apr 2017
HOD (or delegated nominee) Final authority for all applicants who have answered NO to all questions in Section 1 and for all Undergraduate research (including Honours)	PROF T. GORLANDA		6/4/17.
Chair: Faculty EIR Com: For applicants other than undergraduate students who have answered YES to any of the above	Click here to print name		Click here to enter date.